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ILLINOIS MEDICAL JOURNAL

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GEORGE N. KREIDER, M. D., Editor



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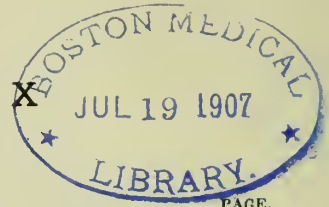
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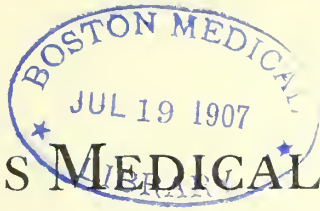
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VOL. X

SPRINGFIELD, ILL., July, 1906

No. 1

ORIGINAL ARTICLES

POPULARIZATION OF MEDICINE.*

PRESIDENT'S ADDRESS.

H. C. MITCHELL, M.D.

CARBONDALE.

One of the greatest advancements in modern medicine is the diffusion of medical knowledge among the masses. Every day we hear of medical societies throughout the world organizing and teaching the general public how to prevent disease. The multifarious learning of the physician is not more for the cure of disease than it is for its prevention. The physician of fifty years ago thought his knowledge of the healing art was merely for his own self-interest and profit, but to-day the progressive physician is equally interested in diffusing that knowledge among the masses. Every day we see articles in the daily press and in our medical journals giving interesting and valuable scientific facts and theories. There are now numerous journals that regularly devote certain space to the popular science of medicine in all its branches. Besides these there are several periodicals, edited by or under the supervision of ethical medical men, spreading knowledge among the people. We are beginning to see evidences of increasing love for scientific truth, even among the classes in whom formerly there was no desire for knowledge of any kind. Articles on scientific subjects of this kind are now read with considerable eagerness, and it is certain that in a few years they will command a much wider circle of readers than they do at the present time. The people are beginning to learn that science is for them and not for the few, and are informing themselves of some of the general principles and facts of medicine and its collateral sciences. Thanks are due to Aggasiz and Huxley, who were the first to popularize the study of the human body in health and disease. To these men we are indebted for the already established teachings in our common schools and higher institutions of learning. Physiology and hygiene are being taught as indispensable branches to every child in the land. The time is not far remote when our common schools will teach geography (anatomy) of the

* Read before the Illinois State Medical Society, May 15, 1906, at Springfield.

body, as well as geography of the land. Physiology is a part of natural science, and if, without loading it with philanthropic projects, its study were pursued like that of any other branch of natural science, it could not fail of inculcating scientific methods of investigation which would be of vast benefit in mental development.

Medicine is a subject in which all mankind has been interested from the remotest generations. Some one has said that if Adam cut his finger while pruning the green arbors of Paradise, Eve closed the wound and made a very proper application with a figleaf; and if she, in her turn, got a little dust thrown into her eyes, an accident to which she proved herself to be liable, Adam wiped it away along with a few of her tears. I earnestly believe that the principles of the healing art should be taught in our schools and that popular lectures on the subject should be delivered to the general public. Possibly they might not be quite so amusing and novel as many forms of our modern entertainment, but they could be delivered in a way that would make them quite attractive and vastly more instructive. "Man, know thyself." The human body is the greatest wonder of creation. Nothing that man can devise or that the Almighty has created is worthy to be compared with the complex, wonderful machine we call man. Therefore it is the duty of every human being, so far as possible, to acquaint himself with the structure and functions of the human body, the various agents by which it is preserved in a state of health and vigor, and by the abuse of which disease is induced; hence it is plain that they should not be left in entire ignorance of the nature and effects of remedial agents and the causes and symptoms of the various morbid affections of the most common occurrence. Furthermore, if it is beneficial to teach a child the influence of alcoholic beverages, would it not be equally advantageous to teach it the influence of food, stimulants and narcotics, exercise, sleep, laws of inheritance, influence of occupation on health and longevity of man as compared with animals? In fact, a general knowledge of medical science by the public will aid us in preserving health and prolonging life, and thus add much to our usefulness and happiness, since it teaches us how to care for ourselves and others. Men think they know how to care for themselves when they have health. While their families are spared and the absorbing cares of life occupy their time they forget that there is such a thing as care for their persons. Inclination is made pre-eminent over right living; the forces of disease are unseen and consequently overlooked.

As previously stated, the great progress in medical science is not so much to cure disease as to prevent it. The greatest advance medicine has made of late years is shown not so much by the treatment of disease, but by forestalling it and preventing epidemics, by strict observance of sanitary regulations and the laws of health. To carry this out successfully the public must have a general knowledge of medicine, so that they may the more intelligently perform their duties as members of society.

The idea that once prevailed, that a knowledge of these subjects should be monopolized by the medical profession and dealt out to the people as

it was paid for, has long since been exploded by the up-to-date physician, as it is the duty of every intelligent physician to impart knowledge of this character to his patients, because it makes of them better doctors, better lawyers, better clergymen, better merchants, better farmers, better mechanics, better laborers, better artisans, better wives, better husbands, better mothers, better fathers, better citizens and better in every condition and relation to society. We should also remember that every evil that is experienced by the human system, every pain, every sorrow, every disease, comes by the operation of the law of cause and effect. Nothing evil or good comes to us by chance. Contagions and epidemics and the myriad forms of diseases that affect the human race are dependent upon definite causes. Much of the sickness and misery that almost continually lingers around the average American home might be prevented if we only gave a little more attention to the laws of sanitation.

The medical profession should exert every influence to have introduced into our public schools and colleges a systematic course of hygienic medicine, and should see to it that it receives more than an incidental and superficial attention, and that it be made equal to that of any other subject in the course. It may be asked, who will be the instructors? We must answer, the physician, since he is the only authority on this subject and is alone qualified to give instruction along these lines. The science of medicine is a large subject, and it takes a lifetime to comprehend it, and even then we master only certain branches of it. It is only natural that the people should look to those who have devoted their lives to the study of this subject to teach them. There is no greater vocation in life than that of the teacher, and no subject of more importance than how to live rightly. If we know that which will be of service to our fellow man, we have no right to keep it to ourselves. The miser of knowledge is even more censurable than a miser of money, because he is more intelligent and therefore more responsible. It is even more wrong for us to hoard knowledge than it is to hoard specie, for knowledge is more valuable than gold or silver. The study of those facts and principles of medical science will become exceedingly pleasurable if taught in a proper manner, as the study of science is the most enjoyable department of knowledge.

Knowledge of the parents should be imparted to the children in the family circle by the aid of maps and charts, pictures, attractive books, and especially by the aid of kindly care on the part of the instructors; these theories can be made not only instructive, but actually fascinating. The commandments of physiology and hygiene should be drilled diligently into our children, line upon line, precept upon precept, here a little and there a little, in the house and by the way, at their lying down and their rising up. No parents should allow their child to reach the age of puberty without due knowledge of the moral and mental responsibility it brings. Much of the scientific instruction given to children in early life will not be fully understood and appreciated until after years, but in times of need they will both remember and appreciate its value. As they rise to positions of responsibility and honor their

lives will be guided by their early teachings. They will remember it in the hour of their temptation and will derive therefrom wisdom to direct and strength to resist the force of mastering passions. They will remember it in the time of darkness and sorrow and rejoice in the light of its truths and find the rarest consolation in the activity of its pursuits. They will remember it when they themselves are parents, and in turn will teach it to their children, and they again to their children's children, unto the remotest generations.

There are a thousand reasons why a fair acquaintance with the science of medicine and the philosophy of prevention and cure should be acquired by all. The public should be instructed that they may know that medicine is not an exact science. We only claim to assist Nature. Benjamin Franklin said: "God heals and the doctor takes the fee." The question arises, where is the medical man benefited by instructing the public in medical science? This can be easily shown. First, if you wish to acquire a perfect knowledge of any subject you must teach it to others. The professor becomes learned from the fact that he is continually repeating it to his auditors. Gyron Edwards says: "Thoroughly to teach another is the best way to learn yourself." Second, all physicians the world over will agree that ignorant people make the worst patients. The lower classes are proverbially exacting and unreasonable, and too often unappreciative. In proportion as people are educated, in that proportion do they become considerate toward their physician, obedient to his orders and grateful for his services.

Let us consider some of the ways medical advice affects the uneducated family; here, for instance, is a single family, husband, wife and children, all ignorant of the laws of healthy living; they know but little of the functions of the organs of their bodies, and neither the father nor mother is competent to advise their children in this respect, save in the most general way. The mother, whose duty it is to rear her delicate offspring, does the best she knows, but miserably fails too often, and the family grows up as best they can, if, perchance, Nature wins in the unequal conflict. What is the cause of all this terrible infant mortality? Is it necessary that one-half of the children born into the world should die under five years old? Do they not all come into the world, setting aside the imperfect and deformed, with an equal chance for life? Why do they die? Because of the ignorance and inability of parents to make proper surroundings, bad air, bad food, poor clothing, poorly ventilated rooms, and a thousand other imperfections, too numerous to mention.

The effect of the popularization of medicine would be not to diminish the practice of the profession, but to increase it. Patients are deterred from consulting educated physicians, not by knowledge, but by ignorance, not by their ability to prevent or treat disease, but their inability to distinguish between those conditions which are beyond all hope and those which in scientific hands are entirely curable. When the people are educated to a full understanding of the wonderful achievements of medical science in the past, and the vast progress it is making in the pres-

ent, then, and only then, will they appreciate the difference between the educated physician and the quack and the results obtained by these two individuals. It is only by educating the masses that the vast army of charlatans that are working such ruinous havoc among the people can be put out of business. The quackery of our day feeds and fattens on the ignorant. It derives its rich support from the fact that the people know more of other things than they do of medicine. How often are we compelled to gaze upon this great rush of humanity after quack doctors, quack literature, quack medicines, knowing full well that only the education of the masses will forever stop it! There is, perhaps, no branch of science which stimulates more interest and curiosity than books and pamphlets treating of disease. Even if they are written by charlatans in a popular manner, they never fail to secure readers. The medical literature read by the public up to the present has been furnished largely by unprincipled charlatans. It is being furnished in the form of almanacs, booklets, handbills, daily papers and even in religious periodicals. This literature is written up in such a way as to catch the unwary and unsuspecting and lead them to think that they are similarly affected. This lamentable and well-known fact, which should long ago have aroused the profession to a sense of duty, seems to have had the opposite effect, and has deterred many of them from attempting any systematic instruction of the people. There are those even now who fear to write or lecture to the laity for fear they may be classed with the ignorant and villainous charlatans, who in this country have appropriated this department almost entirely to themselves. Thus it is easy to see that we often find the land invaded with Philistines, and the medical man is confronted with a patient loaded with prejudices, harder to remove than the disease; otherwise the sick would be disposed to listen to and adopt rational advice, and be better able to distinguish sound judgment, enlarged experience and patient observation from shallow pretension, base chicanery and imprudent empiricism.

There may be those who fear, lest the profession may lose its dignity by coming down from its lofty eminence and feeding the hungry multitude. In the infancy of science, in the darkness of the middle ages, such fear was, perhaps, not unnatural, but the time for that has long since gone by. When the sun is rising it shines only on the highest mountain tops; when it mounts to noonday it sends its rays, bright, warm and abundant, into the depths of the valley and the darkest crevices of the rocks. So when science began to enlighten the world at first it shone only on the philosopher, but to-day, as it is rising higher in wisdom's sky, it should shine with healing in its beams on the humble, the sorrowing and the lowly. It is ignorance and credulity on the part of the masses that renders them such an easy prey to the wiles of the charlatan and the "patent medicine" man. How often have we seen the wholesome advice of the scientific physician disregarded and the patient take with greediness some patent nostrum that was not only worthless but harmful. How, we say, can these evils be remedied? Surely not by legislation, but by education. No laws will ever be able to prevent quackery

while the people believe the quack is an honest man and as well qualified as the physician. Salvation from quackery can only come from popular instruction. Besides all this, it is the duty of the profession, through the popularization of science, to make itself a power in society. Many valuable lives are lost to communities every year by lack of cleanliness, insufficient ventilation, deficient and impure water supply, impure and improperly cooked food and a total neglect of the general principles which lie at the very foundation of human life and health. With our present knowledge of the causes of disease and its prevention it is a disgrace to contract many of the forms of disease prevalent, as it is necessary for us to eat the germs in order to contract them.

While the duties of the physician to the general public are many and sacred, there are obligations from the public to the physician that are equally as binding. To you we say, don't be too quick to criticise your physician, as the sweets in a doctor's life are few and far between. Don't be afraid of overpaying your doctor, for if you pay him well for his services it will come back to you a thousandfold by enabling him to buy the latest books and instruments, good office furniture and easy-chairs on which to lounge while waiting your turn. It will enable him to attend postgraduate courses and medical societies and to come in contact with the best medical men of the country. When you or your family are sick it will stimulate your confidence in your physician, which not only helps you but helps him. To the public we would say, don't be afraid to consult your physician on all matters of sanitation or health. To the young man or young woman contemplating matrimony we say, take your physician into your confidence and know whether or not the step you are taking is right. Qualifications for matrimony should not be founded entirely on sentiment, but the eternal fitness of things should be one of the first considerations. Too often do we see the happiness of families completely wrecked by something so infinitesimal that it was not thought worth considering when entering upon the marital relation; such diseases, for instance, as are hereditary, or those of a hereditary predisposition, like cancer, epilepsy, insanity, tuberculosis, and also contracted diseases. How often during the year do we read in the daily press accounts of brides of but a few days or weeks dying suddenly! In the majority of instances these deaths are the result of immoral and vicious practices by the husband prior to marriage. I believe that it would be a good law if every man and woman, prior to taking the marriage vow, were required to pass an examination before a competent board of physicians appointed for that purpose. Such a requirement would certainly cheat the divorce courts, rob domestic relations of much misery and suffering and prevent crimes.

We admonished you against criticising your physician. Too often have we heard criticisms something like the following: If the doctor visits his patients when they are well it is because he wants a good dinner, and if he does not do so it is because he cares more for the fleece than the flock. If he goes to church regularly it is because he has nothing else to do; if he does not it is because he has no respect for the

Sabbath nor religion. If he speaks reverently of Christianity he is a hypocrite, and if he does not he is an infidel. If he dresses neatly he is proud; if he does not he is lacking in self-respect. If his wife does not visit you she is "stuck up," and if she does she is fishing for patients for her husband. If he drives a good turnout he is extravagant; if he uses a poor one, on the score of economy, he is deficient in necessary pride. If he gives parties "it is to soft-soap the people and get their money," and if he does not he is stingy. If his horse is fat "it is because he has nothing to do," and if he is lean it is because "he isn't taken care of." If he drives fast it is to make the people believe that somebody is very sick; if he drives slow he has no interest in the welfare of his patients. If the patient recovers it is due to the good nursing he receives; if he dies the doctor does not understand his business. If he talks too much "we don't like a doctor that tells everything he knows," and if he doesn't talk "we like to see a doctor sociable." If he says anything about politics "he had better let that alone." If he does not, "we like to see a man show his colors." If he does not come immediately when sent for "he is too slow and takes no interest in his patients." If he sends in his bill he is in a terrible hurry for his money. If he visits his patients every day "it is to run up a bill"; if he does not "it is unjustifiable negligence." If he orders the same medicine often "his pharmacopeia is very limited," and if he changes it often "he is in league with the druggist." If he uses any of the popular remedies of the day it is to cater to the whims and prejudices of the people in order to fill his pockets; if he does not use them it is because he is not up to date. If he is not in the habit of having frequent consultations it is because he is afraid of exposing his ignorance to his professional brethren.

I care nothing for criticism so long as it benefits mankind. All I plead for is that men of sense and learning should be so well acquainted with the general principles of medicine as to place them in a condition to derive from it some of the advantages with which it is fraught, and at the same time to guard themselves against the destructive influences of ignorance, superstition and quackery. To be teachers of those who come under our influence, we should be men of culture, educated along broad lines. The tendency of the profession to-day is for higher medical education, but we need in our ranks men of sterling moral worth and honesty. The times call for men. Every day the press gives forth the disheartening record of faithlessness to public and private trusts. Men in high and low places, in public and private life, in political office, mercantile and professional stations, are shown to have been recreant to the sacred obligations imposed upon them. In many sections of the land men who profess to be followers of the Master are followers of Judas Iscariot. We need men who, when they enter the sacred precinct of the home, recognize it as a divine institution, ordained of God's love, as the institution for which all others—state, church, workshop and school—exist. We talk about a life work, life task, life mission, with easy flippancy, gliding away unconsciously from the chief task which

God has laid on the most of us: the perfection of human society in and through the power of the home. The true measure of any civilization is found not in its legislation nor in its architecture, not in its poetry nor in its politics, not in its industry and its commerce, not even in its schools and churches, but in the extent to which all of them are made to contribute to the perfection of the family and the glory of the home.

In taking upon ourselves the duties of the physician we become the natural custodians of the public health in the communities in which we live. There is no profession that is broad enough and philanthropic enough that its members will do that which will curtail their business and deplete their own pockets, save that of the member of the medical profession. We should, as members of one of the noblest professions the world has ever known, always be factors in setting up and maintaining a high standard of citizenship. The man who is not broad enough to exercise a protecting care over the public health in the community in which he lives is not worthy of the name physician. We should study to make individuals, families and communities happy by teaching them how to live. Since life is made up of little things, we should learn to extract happiness from small things by dwelling on their beauties and not on their perplexities. For example, how many of us, when we look at a drop of water, appreciate the beauties it contains? When spread out in a fine spray it gives all the colors of the rainbow. When in the form of steam we behold its beauty in its manifestation of great power. As frost on our window pane it sparkles as the diamond. As a snow-flake we are charmed with its feathery-like crystals. In a state of congelation we have the prism. We sit on the bank of some stream and listen to its babbling as it hurries on its course to the river and finally into the broad ocean, where it forms the rolling billows and bears up the great ships of commerce, and is finally attracted by the sun and taken up in the form of vapor, to make the beautiful silver-lined clouds which remind us of Him who has fashioned man after His own likeness. Some one has said: "A large part of God's revelation of Himself is denied the man who has neglected his botany, his biology, his geology, his astronomy, his chemistry." Every sunrise is the poem and every sunset the peroration of a noble discourse from God to His children. The man who feels with and suffers with and smiles with Nature, to whom every flower and every grain of sand is a thought of God and every leaf a note in a continuous coronation of song, is the one who can live nearest to Nature's God.

Then let us view life in its broadest sense. Let us not store our minds with useful knowledge for our own selfish pleasure and profit, but let us impart it to those who come within the length of our cable-tow by teaching our fellow man how to live out his expectancy. Life is more than meat, raiment, money, pleasure, social position or intellectual distinction. It has its root in the veritable past and reaches out into the mysterious but certain future. It is a gift from Him who inhabiteth eternity and is the recognition by God of the eternal element in man

and of the human affinity for the divine. Life is a serious thing and a precious heritage. Our bodies can not be treated carelessly with impunity; violation of the laws of health, like the divine laws, is always meted with swift and unerring punishment. He who would get the most out of life must put the most into it, and there is no better way to get the utmost benefit out of it than by making every day of it count in the largest measure for the glory of God and the blessing of mankind.

PROGRESS IN SERUM THERAPY DURING THE YEAR
ENDING JUNE 1, 1906.*

EZRA READ LARNED, M.D.

CHICAGO.

The principal points to which I wish to direct your attention are the following:

1. Classification of sera as to their being efficient or inefficient.
2. Efforts to produce new sera.
3. Efforts to improve sera which have been inefficient for the purpose intended.
4. Investigations into the possibility of making efficient antigonorrheal and antisyphilitic sera.
5. Wassermann's serum in the treatment of diphtheria.

The court of last resort in the determination of any remedial agent intended for the prevention or cure of pathologic conditions of human beings is the practicing physician who actually treats the cases. It makes no difference how pretty the theories are, if they do not work out in practice they are valueless for practical purposes. It does not matter if the experiments on laboratory animals or the test-tube reactions bear out the theories, the remedial agent is of no benefit in the treatment of disease unless it does the work expected of it by the doctor at the bedside. Bearing these preliminary suggestions in mind, I have seen no reason for changing the classification of the curative sera which I made in the paper which I had the honor of offering to you at our last year's meeting. If you will remember, I divided sera into three classes: Class No. 1 included all those sera whose efficacy had been definitely proved by overwhelming evidence. Class No. 2 covered the sera whose value had not been definitely proved. Class No. 3 included all those sera whose value had been shown to be negative for clinical purposes. I think there can be no question as to the justice of this classification, arbitrary though it may be.

The medical profession is too largely composed of men who do their own thinking and judging to be influenced by bald statements unsupported by sufficient evidence to prove their accuracy beyond any doubt. With us an authority has weight only in so far as it is known to be

* Read at the Fifty-sixth Annual Meeting of the Illinois State Medical Society, Springfield, May 17, 1906.

an accurate and honest record of facts. Honesty of purpose is of no avail unless the results will actually do what is expected or claimed for them. These remarks will explain to you the attitude in which I approach this exceedingly important subject, and the criterion by which I gauge the value of the various sera which have been offered to the medical profession as remedies for the alleviation and, in some cases, prevention of certain pathologic conditions presumably amenable to the actions of sera.

Unfortunately, I can not include in Class 1 (those sera which have been absolutely proved to be of value beyond the question of a doubt) any sera additional to those included a year ago. Last year I included antidiphtheritic, antitetanic, antistreptococcic and antiplague sera; and, while our literature of the last twelve months contains a great deal of very interesting and valuable writing upon these and other sera, I contend that no evidence has been brought to bear sufficient to include any other than those mentioned in Class 1. In Class 2 I put antithyroidin, thyroidectin and serum for exophthalmic goiter, hay-fever serum, tuberculin, antianthrax serum and serum for relapsing fever. In Class 3 (those sera whose efficacy for the purpose intended is *nil* at present) I must still include antipneumococcic, antidysenteric, antityphoid, antivarioloid, anticancer, antierysipelas, antirabic, antimalarial, antirheumatic, anti-anemic, antisiphilitic and antigonorrheal sera and leprolin. There have been three notable efforts in behalf of new sera made known in the literature during the last year, one on the preparation of a serum for exophthalmic goiter, another on the production of an antigonorrheal serum and another on the rapidly accumulating evidence in support of the contention that in the *spirochæta pallida* or, as some prefer to call it, the *treponema pallida*, we have at last found the etiologic factor in the causation of syphilis.

ANTIDIPHThERITIC SERUM.

Antidiphtheritic serum still continues to lead the list as the ideal specific serum and no sane man can deny its efficacy in the prevention and cure of diphtheria. It is harmless in itself; the administration of a pure serum never has done and probably never will do any damage to a patient; but the administration of this agent in sufficient quantity, if given early enough, will almost certainly cure every case of diphtheria so treated, and will prevent the occurrence of the disease in those subjected or exposed to infection. Every now and then some physician complains of antitoxin when he loses a case to which he has administered antidiphtheritic serum, and in each case where it has been possible to make careful investigation of all the circumstances surrounding the case it has been found that either the administration of serum was begun too late, after toxemia had become profound, or grossly insufficient quantities of the serum had been used.

If doses containing enough antitoxin to immunize the entire quantity of toxin in the body were administered in each and every case of diphtheria before serious harm has been done by the toxin the mortality would be zero. This is self-evident. It is daily demonstrated in the

laboratory and is proved in actual practice in the management of all well-treated cases. Too many physicians are prone to use too small doses of antitoxin. If anything has been learned in the last few years in the treatment of diphtheria, it has been the truth of these two statements: first, the absolute harmlessness of antidiphtheritic serum; second, the superiority of large initial doses administered at the earliest possible moment. Too many physicians are content to await developments and use large quantities of antitoxin only in the severest cases and as a last resort. The criminal folly of such delay is too obvious to require further discussion.

I have been asked many times by physicians as to the propriety of administering synchronously antidiphtheritic serum and antistreptococci serum, especially in cases of scarlatina, where the Klebs-Loeffler bacillus has been discovered in the nasopharyngeal exudations, and I have invariably offered the advice that inasmuch as these sera in themselves were harmless and would cause no more damage than injection of so much sterile water, it is perfectly proper to administer them in cases where there can be the slightest possibility of infection. In all suspected cases, or, to put it differently, in every case where there is the slightest suspicion of infection by diphtheritic germs, the administration of 1,000 or 2,000 units of antidiphtheritic serum is not only safe but good practice.

A very comprehensive test of the value of antidiphtheritic serum in scarlatina was conducted by Lopez, who stated that in his experience early curative doses of antidiphtheritic serum administered in scarlatina aborted the disease, curtailed the suffering and lessened the risk of the patient, one dose of 2,000 units being sufficient in the average case of sore throat due to bacterial infection to effect a speedy cure. He also finds that the antidiphtheritic serum is equally effective in all angina cases, whether they be scarlatina, tonsillitis, quinsy, etc. There seem to be no contraindications. Lopez insists that it should be remembered that the largest quantities of serum may be required in the most severe cases, ranging from 20,000 even to 100,000 units, which doses are not depressing to the heart and are not attended by bad results or sequelæ.

Local Action of Antidiphtheritic Serum.—It is well known that the Klebs-Loeffler bacillus may persist for a long time upon the mucous membrane of the patient's throat. Although in some cases the bacterium disappears rapidly, yet frequently cultures have shown positive results after fifteen or twenty days, and in certain cases positive results have been obtained one, two or three months after the patient has apparently recovered from diphtheria. The antidiphtheritic serum injected under the skin seems to have no effect on the vitality of the germ in such cases. In attempting to abbreviate the time of isolation of this class of contagious patients, antiseptic measures have been recommended, such as swabbing with iodized glycerin, silver nitrate, hydrogen peroxid, etc. Nevertheless the results have not been satisfactory. Dopter reports some interesting experiments on the local action of antidiphtheritic serum and his report is of much interest. Recently Wassermann, of Berlin, reported that

the serum obtained from the blood of horses immunized against the cultures and the toxins of diphtheria germs possesses the property of producing marked agglutination of the bacteria when applied to the throats of patients. Vogelsberger reports his experience with Wassermann's serum and states that it caused the disappearance of the bacilli from the mucous membranes of the throats of diphtheritic convalescents. We thought this question of sufficient importance to immunize a horse according to Wassermann's method, which was to inject not only the toxins but the actual cultures of the diphtheria germs. Some of this serum was desiccated and administered to patients, both in the form of a powder and in the form of a tablet. Thirteen cases of diphtheria were given the desiccated serum. Whether this method possesses any great advantages I am unable to say. As yet the experiments have not been carried on far enough to warrant any definite conclusions. In the thirteen cases referred to, the germs disappeared on an average in eight and one-thirteenth days, which is somewhat less than the average in other methods of treatment. Huber has made a preliminary report upon the use of antidiphtheritic serum in the treatment of epidemic cerebrospinal meningitis and claims that there was observed in most cases an amelioration of all the clinical features and no ill effects followed in the series of cases in which the antitoxin was given. The method of administration was by lumbar puncture, four to six drams of spinal fluid being allowed to escape, and then from 1,500 to 2,000 units of antitoxin slowly injected.

ANTITETANIC SERUM.

Antitetanic serum is included in Class 1, because I believe that is where it belongs. No matter what your individual opinion may be in regard to its curative value, there is no question whatever of the prophylactic and immunizing value of antitetanic serum. There has been adequate evidence offered in support of this statement. The curative value of antitetanic serum is just as great as that of antidiphtheritic; the trouble has been that the chemistry and pathology of tetanus is little understood by the vast majority of physicians. We are also handicapped by our inability to offer an accurate dosage of antitetanic serum, such as we have in antidiphtheritic. No one has yet been able to definitely standardize antitetanic serum and to provide a unit standard, such as makes the administration of antidiphtheritic serum so accurate as to dosage. A vast amount of work has been done in this direction, however, and I confidently believe that before another twelve months pass something of extreme interest in this connection will be found in our literature.

I urge you all to seriously consider your grave responsibility in the prevention and treatment of tetanus. The Fourth of July will soon be here, and while there is evidence on the part of the public of an increasing desire to do away with the "insane Fourth" and to limit the expressions of enthusiasm on that occasion to something less dangerous than the unrestricted use of gunpowder and dynamite, it is too much to expect the average small boy to give up fire-crackers, giant crackers, giant caps, toy

pistols and all the other fascinating but deadly implements of mimic warfare. The Fourth of July infections have been the most prolific in the production of cases of tetanus, and unless you know positively that there has been no tetanus infection possible you owe it to your patient and to your own conscience to act upon the assumption that if tetanus is not probable in your case it is certainly possible, and to take prompt measures to render your patient immune against the tetanus which might follow if you did not take such action.

ANTISTREPTOCOCCIC SERUM.

I have included antistreptococcic serum in Class 1 because there seems to be no doubt that in a large proportion of cases of pure streptococcic infection this serum has acted most beneficially. What is probably responsible for the cases in which the serum has given indifferent results is the fact that these cases of sepsis were complicated by organisms other than the streptococci, and upon which antistreptococcic serum would have little, if any, effect. Antistreptococcic sera are still somewhat experimental, but on the whole very encouraging for true streptococcic infection. In the recent French Congress of Surgery, Willems reported the result of protective injection of antistreptococcic serum prior to surgical operations within the mouth. It was especially in uranostaphylorrhaphy that the beneficial effects of this procedure were noted. Instead of the usual gray-looking, unhealthy wound following this operation, the edges were clean and clear and red. The difference was very striking as compared with the usual method. The dose in such cases was 20 c.cm. the night before the operation, and perhaps a second injection of the same quantity at the termination of the operation.

RHEUMATIC SERUM.

Kanel reports the results of treating sixteen cases of acute and five of subacute articular rheumatism with Menser's antistreptococcic serum obtained from living cultures of streptococci which were isolated from rheumatic patients and used to immunize horses. The author announces that the serum is entirely harmless and has given very good results in some cases.

ANTIPLAGUE SERUM.

Antiplague serum seems to merit inclusion in Class 1, as a very careful investigation of the entire subject and close study of the literature inevitably lead to the conclusion that it is of positive value when given in large doses and repeatedly. Antiplague serum is probably of passing interest only to the vast majority of American physicians, as bubonic plague is exceedingly rare in the United States. With the increase of our foreign interests, however, and the passing back and forth of our citizens from the Philippines and China, particularly of the troops, the possibility of seeing cases of bubonic plague becomes much more likely. The only case of which I have any personal knowledge was that of a worker in our laboratory, who became infected from handling pathologic material from cases of plague found among the Chinese

in San Francisco, and he was exceedingly ill for a time. The serum, which was, fortunately, on hand, undoubtedly saved the patient's life. This man, by the way, is now a worker in the government laboratory in the Philippine Islands.

This completes the sera I have included in Class 1, and I now take up the consideration of Class 2, or those sera whose value has not been definitely proved.

SERUM FOR TUBERCULOSIS.

The most important announcement for the year, perhaps, was Behring's address at the International Congress at Paris, in October, 1905, in which he claimed to have discovered a cure for tuberculosis. He declined to make any definite statement as to its nature or the method of its preparation, but from what he did say it seems to be an outgrowth of his vaccination method of protecting cattle from this disease. He vaccinates cattle with live cultures of human tubercle bacilli and claims thereby to protect them against the disease. Recognizing that it would be manifestly impossible to undertake the inoculation of human beings with live tubercle germs, he seems to have attempted the breaking up of the dead germs into an essential or immunizing portion and a non-essential or injurious portion. He removes this latter portion by extracting the germs, first with water, then with salt solution and lastly with alcohol and ether. The portion remaining after these extractions he injects into men or animals, and claims that by the union of this body with the cells they become immune to tuberculosis. Considering Behring's announcement in the light of his own and other experimental studies, we are allowed to assume that he has entered upon a new line of work. It seems, though, that his method was based upon propositions not original with him, but elaborated by others before him, particularly Metchnikoff and Klebs. How much mankind is to profit by Behring's work can not be predicted, as his carefully though ambiguously worded statements mean nothing but a possible, but unproved, hypothesis of a principle which may be applicable in tuberculosis.

Some interesting experiments have been conducted in the treatment of skin tuberculosis, particularly of the face, with tuberculin and the *x*-ray combined, comparing results of this treatment with those of the use of the *x*-ray alone. I am informed that the tuberculin treatment is far more beneficial. I understand that a full report of this work is to be published later.

HAY-FEVER SERUM.

A final decision as to the value of the serum treatment of hay fever does not yet seem to be warranted. From the mass of experience and literature rapidly accumulating we may hope soon to arrive at a conclusion. I expect that during the approaching hay-fever season a much more systematic effort to determine the value of the serum treatment of hay fever will be made than ever before, and the results of this work will go far toward the ultimate inclusion of hay-fever serum in its proper class.

SERA FOR EXOPHTHALMIC GOITER.

Last year I included thyroidectin in Class 1. This year I include it in Class 2, because sufficient evidence has not been accumulated to warrant our calling this a true curative serum. Some cases do not respond well to the treatment, and in a few instances have even shown an aggravation of the symptoms, although it is true that the majority of cases of true exophthalmic goiter are greatly benefited by the use of this serum. Thyroidectin is the name given to the blood of animals which have been subjected to the removal of the thyroid gland, and two or three weeks after their recovery from the operation they are bled and the whole blood, under strictly aseptic precautions, is dried and powdered. This is administered by the mouth in doses of from 5 to 10 grains two or three times a day, as each individual case seems to require. The effects of the administration of this blood are diminution of the tachycardia, reduction in the size of the goiter, lessening of the exophthalmos and disappearance of the sweating, tremor and fatigue. One notable effect is the increase in weight of many patients taking the blood from thyroidectomized animals. Ries reports one case in his practice where the gain in nine months was seventy pounds. Antithyroidin is the name given to the serum of the blood of thyroidectomized animals. The administration and action are quite similar to those of the whole blood. The researches of Beebe and Rogers, in the production of a serum for the treatment of exophthalmic goiter, in which they have used the normal and the pathologic human thyroid gland, make exceedingly interesting reading. The clinical reports which these investigators have offered are certainly too important to be ignored and it may be that these men have at last hit upon a method which will eventually provide us with a means of successfully treating this baffling condition.

SERUM AGAINST RELAPSING FEVER.

It appears, from the work of Norris, Papenheimer and Flourney, as well as Novy and Knapp, that the blood of rats which have been given repeated injections of spirochætal blood exerts a most marked preventive and curative action. The application of this discovery to the treatment of relapsing fever will probably soon follow, and if it should prove as effectual in man as it is in the white rat it will afford a method of prevention and successful treatment.

ANTHRAX SERUM.

Wilms injected Soberheim's anthrax serum into a man who had a left-sided swelling of the face, neck and chest, following the appearance of an anthrax pustule over his left brow. Difficulty in swallowing and nausea developed and his general state became gradually worse. He was given 20 c.cm. of anthrax serum directly into the median vein; this was followed by profuse sweating. The injections were repeated from day to day until he had received six injections, in all 115 c.cm. The patient recovered. In a second case no general symptoms existed, but the face and neck were much swollen, the result of the anthrax. He

received two injections. The author gives the entire credit for both recoveries to the serum.

Now we come to class 3, which comprises all those sera whose value has been negative, or practically so, for the clinical purposes for which they are intended.

ANTISYPHILITIC SERUM.

There is nothing new in animal therapy for syphilis. If the present tendency to look upon the *spirochæta pallida* as the causative factor proves well founded, it will, of course, discredit all the previous anti-syphilitic sera which are being offered and which are, so far as I am able to learn, of questionable value. So far as I can discover, the *spirochæta* has not yet been grown in pure culture and, much less, has any serum been produced by its use.

ANTIGONORRHEAL SERUM.

The only contribution toward an antigonorrheal serum was made by Torrey. Torrey's serum appears to be of no value in acute or chronic gonorrhea, but has given some surprisingly good results in gonorrheal rheumatism. Torrey has grown pure cultures of the gonococcus in a mixture of ascitic fluid and beef tea and used rabbits for the production of the serum. In the treatment of gonorrheal rheumatism by antigonococcic serum the serum is injected into the subcutaneous tissue in the back of the patient's arm in doses of 30 to 40 minims. The dose may be repeated on successive days, according to the requirements of the case. The serum has little or no effect upon the urethritis, and so long as that disease persists recurrence of the articular complications may be looked for.

ANTIPNEUMOCOCCIC SERUM.

While encouraging reports appear from time to time in the literature regarding the use of antipneumococcic serum, a regard for scientific accuracy compels the statement that antipneumococcic serum is as yet on the whole very disappointing, and exerts no appreciable effect upon the course of the disease which can be directly attributed to the serum, and which can not be duplicated by other measures than serum therapy. The death rate from this disease still remains disgracefully high.

ANTISCARLATINAL SERUM.

The production of a specific serum for scarlet fever is yet to be accomplished. Hamilton, Campe and Ganghofner have reported good results from the use of certain forms of antistreptococcic sera, but no specific serum has yet been produced which will do for scarlatina what antidiphtheritic serum does for diphtheria.

ANTITYPHOID SERUM.

Although the production of an effective curative serum for typhoid fever would be of tremendous value to therapeutics, yet the accomplishment of this result is beset with so many difficulties that the desired result is still to be attained. As evidence of the work already done, I

cite the reports of Stokes and Fulton, Rodet, Rosias, Brunon and Chante-messe.

CANCER SERUM.

Some time ago it was dramatically announced by Dr. Doyen, the well-known Parisian surgeon, that he had perfected a serum which would cure cancer. He asked the Paris Surgical Society to appoint a committee to investigate his claims. This was done, and after five months spent in investigating the facts, these experts have submitted their report to the society. It is anything but favorable. According to the report, the serum when first used causes a temporary improvement in some cases, but it never cures. Of the twenty-six cases examined twenty became much worse under the treatment. The opinion is expressed by the committee that Dr. Doyen mistook his desires for facts. Thomson records four cases treated by Doyen's serum. In the fourth case it was found that the disease was not malignant. In the other three cases the serum was injected, with recurrence and a rapidly fatal result in all three cases. In other words, the serum had no effect whatever upon the progress of the disease. Doyen's serum is obtained from the micrococcus neoformans isolated from malignant growths.

Of another kind, however, are the experiments by Clowes, who gives a preliminary report on some investigations suggested by the fact that while there are many authentic cases of recovery from carcinoma, no attempt has been made to determine the effect of the serum of these spontaneously recovered cases upon those suffering from similar affections. Mice were used for these experiments, inoculated with material from two supplied by Professor Jenpen of Copenhagen. The method pursued was to treat in each case two affected mice at the same time, one with injections of blood derived from mice recovered from the disease, the other with a similar amount of ordinary mouse's blood. Up to the time of making the report, experiments had been carried out on twenty mice; of those treated with repeated doses of the so-called immune serum, one only has failed to show some effect which may be attributed to the serum, and all are alive. Of those treated with normal serum five are already dead and others have now tumors larger than those for which they served as controls. Tumors weighing more than three or four grains were not appreciably affected by the serum, but the cachexia from which the mice suffer in the last stages was in all cases alleviated. The serum of mice cured of their tumors by the above treatment was found to possess a certain degree of activity, but not to the extent exhibited by that of the spontaneously recovered cases.

ANTIRABIC SERUM.

Nothing has yet been produced in the way of an antirabic serum which possesses any value, either for curative or immunizing purposes.

SERUM FOR MALARIA.

The antitoxin treatment of tertian malaria is still very much in the future. Reports show that nothing has been produced along this line.

FATIGUE ANTITOXIN.

Weichardt has been publishing some very interesting accounts of the production of fatigue toxins and antitoxins. The idea seems to be that the antitoxin would be adapted for use in various sports, for soldiers undertaking prolonged marches, for the prevention or relief of fatigue, and also might be applicable in diseases where a powerful tonic is required. It is suggested that the proteid molecule has a tendency, at the beginning of its disintegration, of splitting up into toxic substances, with the formation of by-products which have important physiologic and pathologic properties. The fatigue toxin does not disappear under simple chemical combinations but forms antibodies which act against the toxic products of disintegration. The substance of Weichardt's own account of his discovery is as follows: He pulled guinea-pigs back and forth over rough ground until they were extremely tired and showed a sinking body temperature. Under careful antiseptic precautions, he obtained some muscle plasma, which compared with the normal flesh, was redder in color and tasted bitter. Animals into which it was injected in any quantity died promptly. Weichardt procured some of the dialyzable material of the residue, which in a few weeks became absolutely dry and at a low temperature remained active. Injected into animals, it produced an antitoxin which conferred a species of immunization against weariness. These experiments are far from complete and may not be of any practical value, but are decidedly interesting.

ANTIERYSIPELAS SERUM.

Mastri reports from Rome three cases of erysipelas which seemed to be cut short or very favorably influenced by two injections of antidiphtheritic serum. He injected five hundred units in children and one thousand in a man of sixty and a woman of thirty-five, repeating the injection twice in the course of one or two days. Fornaca instituted some interesting experiments. A severe epidemic of erysipelas in Turin gave him an opportunity of obtaining serum from convalescents, and injecting it almost immediately into other cases, compared the result with those obtained by the older treatment. The epidemic was severe. The cases treated by local applications and the usual general measures lasted from nine to fifteen days with high temperature and serious illness. Nine cases were given the serum treatment. In each case the process was localized in the face. The serum was taken from the worst of the cases, being removed from the arm on the second or third day of convalescence and kept on ice for a short time before use. The day of injection varied from the third to the eleventh day of the illness; the number of injections from one to three; the amount injected at one dose from ten to fifty cubic centimeters; the total amount administered from twenty to ninety cubic centimeters. The influence of the injection was usually seen in the fall of temperature, return of appetite, a feeling of well-being, a rapid disappearance of headache. It favorably affected the general condition of the patient both subjectively and objectively, but not the local erysipelatous condition. Fornaca concludes that the serum has no bactericidal

effect upon the streptococci, but diminishes their virulence. Ayer reports fifteen cases of erysipelas treated with antistreptococcic serum and adds the reports from thirty-three cases treated by others. The author states that the shortening of the average duration of the disease by two and six-tenths days in those treated with serum as compared with a series of seventy-nine cases treated by older methods, about expresses the value of this form of treatment. Fornaca believes that the injection of the serum from a patient convalescing from erysipelas exerts a favorable action on the evolution of this disease. He also notes that the local process is not modified in any way whatever.

ANTIEPILEPTIC SERUM.

Ceni has endeavored to prove that there is a specific serum in the blood of epileptic individuals and has published the result of his researches on the antitoxic elements of the blood serum of epileptics in which he has endeavored to show the therapeutic properties of this serum. A careful investigation of his reports discloses that his results are practically negative, so far as showing any therapeutic value of the serum is concerned.

ANTIDYSENTERIC SERUM.

A great deal of work has been done during the last year on antidysenteric serum, and, while it is true that there have been quite a number of cases favorably influenced, it seems to be the consensus of opinion that in America at least, antidysenteric serum has been disappointing.

SERUM FOR ANEMIA.

Norsa's experiences with four anemic patients treated with a prepared antianemic serum were not promising. The serum treatment caused a transient increase in the number of figured elements in the blood, but this soon passed away and no permanent benefit was apparent. Berti describes his experience with a serum prepared by immunizing a sheep with the serum of a patient ill with ankylostomiasis in an advanced stage. The antibodies generated thus in the sheep were assumed to be beneficial in the treatment of other cases of miner's anemia. Three cases were observed by the author in which the serum was given experimentally, but only a moderate degree of improvement was secured. The author thinks, however, that better methods of manufacturing the serum would give more pronounced benefit in the treatment.

CYTOTOXIC SERA.

An improved form of cytotoxic serum was produced in New York by S. P. Beebe, working under the Huntington Fund for Cancer Research.¹ All cytotoxic sera heretofore made have not been strictly specific. They have all had more or less hemolytic action and some have been decidedly toxic for the cells of other organs. This common action

1. Jour. of Experimental Medicine, vol. vii, p. 733.

is probably due to certain constituents which are common to the bodies of many cells. Hence, Beebe decided to use only the nucleoproteids of the cell for the production of a specific cytotoxic serum, as these are the characteristic constituents of the cell par excellence. He carefully removed the blood from the organ selected (say the liver of a dog), minced it fine, extracted with water, and precipitated the nucleoproteids with acetic acid. The precipitate was dissolved in dilute alkaline solution and reprecipitated until pure, then used for injection into animals. The blood serum of these animals, when injected into another dog, caused degeneration of the liver, and practically no other changes. The end aimed at in this work is, of course, the treatment of cancer. If, when a cancer is removed, it could be worked up, and, by it, a serum produced, which, injected into the patient, would destroy any infection in the wound or any metastatic growths left behind, it would be of great service. Beebe has shown that a highly specific cytotoxic serum can be produced. It remains to be seen whether a cancerous growth is sufficiently differentiated so that it can be destroyed without involving the structures from which it sprang.

There have been two new words introduced into scientific nomenclature, "opsonin" and "agressin." Opsonin was introduced by Wright and Douglass² to designate that power of blood serum which, by acting on bacteria, prepares them for ingestion by the phagocytes. Aggressin was introduced by Bail and Weil to designate the offensive weapon of the bacteria, by means of which they are enabled to invade an animal and overcome it. The pleural or peritoneal exudate of an animal just dead of some infection, when freed of bacteria, contains the aggressin in available form. If a portion of this liquid be injected into another animal at the time of inoculating it with the same infection, this animal dies much sooner than a control animal receiving a similar infection but no aggressin. An otherwise not fatal infection can be made to kill by a simultaneous injection of aggressin. The opsonic power of the blood is measured by mixing a portion of defibrinated or citrated blood with an emulsion of germs, incubating, then counting the number of germs ingested by the white blood cells. Blood serum is tested by mixing with washed blood corpuscles and an emulsion of bacteria, incubating and counting as before. The opsonic power of the blood varies but little with different well individuals or at different times of the day. It is, however, destroyed by heat and gradually disappears from blood after it is drawn from the body. The opsonin represents the body's power of resisting the attack of a germ and the aggressin represents the germ's power of attack; their relative proportions will largely determine the issue in an infectious disease.

I thought it might be of interest to those who care to read up on this subject to arrange a bibliography slightly different from the customary manner, and I have, therefore, prepared a list of contributions on the subject of serum therapy which have appeared in the English and

2. Proceedings Royal Society, vol. lxxii, Sept. 1, 1903, and vol. lxxiii, Jan. 11, 1904.

foreign literature in 1905 and thus far in 1906, arranging the literature references in the two years mentioned and subdividing them under the heads of the various sera discussed.

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THE TREATMENT OF COMPOUND FRACTURES.

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CHICAGO.

A compound fracture is one in which there is a wound through the soft tissues, including the skin and extending from the bone to the surface. The wound in the soft tissues may be caused either by the bone perforating from within outward or by almost any external force. A compound fracture may involve any bone of the skeleton and is always an injury of considerable moment and may be very serious. When called to see a patient suffering from compound fracture, the clothing should be cut loose, the wound should not be unnecessarily handled or probed, but, instead, should be covered with a piece of sterile gauze or freshly laundered piece of white cotton cloth and a bandage should be snugly applied. If the hemorrhage continues, an Esmarch constrictor may be required. The extremity is now placed in a blanket splint to

prevent additional traumatism and the patient is transported to his or her home, the physician's office, or the hospital for the first dressing.

The first question that has to be decided is, can the extremity be saved or will it require amputation? This question I would answer by saying that so long as the force which has caused the fracture has not cut off all of the principal arteries supplying the part, a primary amputation is never justifiable, and, with proper treatment, the extremity can nearly always be saved. I have never primarily amputated an extremity where there was any arterial circulation to speak of, and I need but briefly cite a case as one of the many instances where an apparently hopelessly injured extremity was saved to the patient.

A young man was brought to the hospital in a police ambulance after having his forearm run over by four wheels of a street car. The patient was put to sleep and, on examination, the following condition was found: The forearm was stripped of fully three-fourths of its skin covering, the radius had a compound fracture at the junction of the upper and middle thirds, and another at the junction of the middle and lower thirds, the muscles were so separated by the force that they looked almost like an anatomical dissection and the radial vein and artery were cut across. In spite of this injury the arm was ultimately saved, and in a few months regained nearly all of its functions. One can not be too conservative in this matter. If the following points which I wish to make are carried out carefully, one has practically nothing to lose by conservatism, and often much to gain, for nature has wonderful reparative power, especially in the young, and frequently almost completely severed extremities will heal on, so to speak.

The next point of importance is that of rendering the area as nearly sterile as possible. If the fracture involves one of the large bones, a general anesthetic should always be insisted upon, because with the patient asleep the disinfection can be much more thorough. I have always adopted the following procedure: Cover the wound with a piece of sterile gauze in order to prevent washing the dirt from the surrounding skin into the wound, then scrub the whole extremity thoroughly with green soap, water and brush, and rinse off with sterile water. After this has been thoroughly done, the wound itself is cleaned in the same manner. In order to do this satisfactorily, many succeeding basins or pitchers of boiled water may be required. The whole limb, including the wound, is carefully washed with ether, the wound thoroughly cleansed with turpentine, swabbed out with tincture of iodine, and finally washed out with alcohol.

For the purpose of removing grease and grime, there is nothing quite so effective as turpentine. It is also one of our best antiseptics. Tincture of iodine I have always used because I know of no other so slightly toxic antiseptic, whose antiseptic qualities cover so large a variety of pathogenic bacteria. It also serves the useful purpose of searing over the wound surface. Many of these wounds cannot be rendered perfectly sterile by any means at our command, and, unless this agent is employed, the smallest infected area may serve as a focus for infecting the whole wound

in a very short time. If tincture of iodine is properly applied it will close the cut ends of all veins and all lymphatics, including the tendon sheaths and bursæ, and so completely sear over all raw surfaces as to greatly limit the spread of infection. It will also inhibit the growth of bacteria and prevent their rapid multiplication by rendering the wound dry, thus decreasing the amount of available pabulum. Tincture of iodine is also very useful in destroying the much dreaded tetanus bacillus, though for this purpose it is no longer so essential as it formerly was, as we now have an excellent preventive in antitetanus serum. For the past three years I have used an immunizing dose of antitetanus serum at the time of the first dressing, in all cases of compound fracture where considerable quantities of dirt had gained entrance to the wound, and in no case did tetanus subsequently develop.

A very interesting case occurred in my brother's service at St. Mary's Hospital three years ago. A lad, eight years of age, was brought to the hospital with a compound comminuted fracture of the left leg. The fracture was treated by the method above outlined, but the immunizing dose of antitetanus serum was not given until the following morning. Everything progressed nicely until the twelfth day, when he developed unmistakable signs of tetanus, namely trismus and opisthotonos. These, however, subsided in forty-eight hours, and the patient made an uneventful recovery. This case, more than any other, convinced me of the prophylactic value of antitetanus serum.

If my memory serves me correctly, the only deaths from compound fracture that I have ever had were due either to primary shock or to tetanus, the latter before the introduction of antitetanus serum. By carefully and conscientiously following the above routine in every case, I have never had a fatal or serious septic infection complicating a compound fracture; a fair proof, I think, that this danger, even if it cannot be entirely eliminated, can be reduced to a minimum.

If a large quantity of street or garden dirt has been rubbed into the wound, it is sometimes necessary to trim off the lacerated skin edges with a sharp knife, and even to cut off small particles of muscle and fascia in order to cleanse the part satisfactorily, and in order to get at pockets containing dirt, it is sometimes necessary to enlarge the wound in various directions. After the wound has been rendered thoroughly clean, it is well to inspect it, to determine the exact condition of the fracture, to carefully remove tendons and nerves, fascia and pieces of muscle from between the ends of the bone, to remove detached spicules of bone, to ligate ruptured vessels, to determine how much one will do in the way of repairing severed muscles, fascia, tendons and nerves, and how to drain. In reference to reuniting torn tendons and nerves, if the soft tissues have been badly lacerated, if dirt and grime have entered the wound in considerable quantity, the less plastic work one attempts at the primary dressing the greater per cent. of good results one will have. In such cases one's entire efforts should be directed toward saving the life and limb of the patient, and to getting good bony apposition, leaving the

suturing of the tendons and nerves to a subsequent plastic operation when the wound has been entirely healed for some time.

I am convinced that an attempt to do too much at the time of the first dressing often necessitates a subsequent amputation. Such plastic work not only increases the primary shock very considerably, but it also increases the danger from sepsis, and often interferes with the circulation of the extremity distal to the point of the wound and fracture. I can possibly make this point clearer by briefly citing the case of a young man who came under my care at St. Mary's Hospital about three years ago. The patient was a paper cutter and got both of his hands under the knife so that the left forearm was entirely cut off about one inch proximal to the distal end of the radius and ulna. The right forearm was almost completely cut off, the knife having severed both the radius and ulna, so that the hand was dangling at the side with the soft tissue joining it to the forearm not exceeding the thickness of the index finger. The patient begged so piteously before being anesthetized to have me try to save this hand that I promised to make an attempt. I disinfected it thoroughly, sewed it in place by a few silkworm gut stitches, and awaited results. To my great surprise only the thumb and index finger became gangrenous, requiring their removal a few weeks later. After the wound had entirely healed, we united the tendons and nerves and the patient has regained sufficient use of what remains of his hand to be able to write and do various other things with it. I am sure that if in the above case I had made any attempt to find the nerves and retracted tendons, the little circulation with which the hand was supplied would have been so damaged as to require a subsequent amputation.

The question whether the bone should be sutured or wired at the time of the primary dressing is often asked. I would say, "No" most emphatically. By applying the proper retention apparatus, good bony apposition can be secured in almost every case without it. Even where good apposition cannot be secured without it, it is better to allow the wound to heal first and subsequently to do a bone suture operation. The great objection to suturing or wiring bone at the first dressing is the fact that it almost invariably causes more or less bone necrosis. This objection does not hold, if one can bring the fractured ends together by passing the sutures through the fascial or tendinous covering of the bone, as in the fractures of the patella.

The next point for consideration is drainage, and with it the question of how much of the wound it is best to close. No hard and fast rule can be laid down, but I am of the opinion that the tendency is to close too much of the wound at the primary dressing. I am sure that it is much safer to err on the side of too little closure of the skin wound, because any defect can be easily and quickly closed later by Thiersch skin grafts when all danger of sepsis has passed. Even wounds caused by the perforation of the bone will do quite as well if not sutured. In a thoroughly drained wound, severe septic intoxication is very rare, as the tendency of the lymph is to continually wash out the septic material, thus giving the organism a chance to protect itself by a wall of leucocytes. If the drain-

age is insufficient, the pathogenic bacteria and their toxins are constantly being forced into the lymph and blood circulation, the leucocyte barriers are again and again broken down until the resisting power of the patient is finally overcome. The form and kind of drainage employed will depend upon the nature of the wound. On the whole, I believe that split rubber tubes or cigarette drains are much to be preferred to the old fashioned gauze drainage so much in vogue some years ago. It is all important to secure thorough drainage the first few days until the leucocyte barrier is established. Gauze drainage is very apt to cause retention in pockets at various points, and thus defeat one of its most important objects.

There is one other reason, besides the possibility of sepsis, why primary drainage should be very thorough, and I am afraid it is a consideration which is too often lost sight of. I refer to fermentation fever, or so called primary wound fever, which I am sure is a common cause of death in severe compound fractures in that it causes secondary shock. We all like to see a reasonable amount of fermentation fever in compound fractures as it is an evidence of the resisting power of the patient, but fermentation fever can be so excessive as to actually cause death. This excessive fermentation fever can, I am sure, be prevented in many cases if the wounded tissues are not unnecessarily manipulated, if not too much attempt is made at the primary dressing to repair the lacerated tissues, and if the wound is left wide open and thoroughly drained.

We now come to the problem of immobilization, the solution of which requires the greatest amount of ingenuity, because no text-book or even treatise or system can be so complete as to give directions in regard to the kind of splint or immobilizing apparatus which should be used in every conceivable contingency. No two cases are alike and the different complications and consequent varying requirements are practically innumerable. As in simple fractures our aim must be to get the fractured ends in proper relation to each other, and to hold them in this position until union has taken place; in compound fractures we must, in addition, secure opportunity for drainage. All this must be accomplished without undue discomfort to the patient. In compound fractures this is usually difficult and sometimes impossible, but with good judgment and perseverance it can usually be done satisfactorily. To enumerate and describe the different kinds of material and splints that have been used for compound fractures is beyond our purpose and time limit. Any splint which fulfills the above requirements, no matter what it is made of, or how it is applied, is the one to use in the individual case. To get the ends in apposition and to hold them there is usually the less difficult part of the problem, but to so apply the splint that the wound can be inspected and dressed without disturbing the splint, to have it so arranged that the wound secretions can find exit without soiling the permanent dressings is often a very difficult matter, and yet the more perfectly we accomplish this the more satisfactory our results will be. If we can so plan our method of treatment that the splint which we apply at the primary dressing will not have to be disturbed until bony union has taken place, we

will have done much for the patient. The frequent changing of the splint in compound fractures has many and serious objections. In the first place it is apt to disarrange the proper apposition, and, as a result, there will either be so much displacement as to result in non-union, or, if the displacement is not so great, an excessive amount of callus will develop, which is apt to cause inclusion of nerve trunks and interference with circulation. In the second place, it causes the patient a great deal of suffering. This sometimes saps the vitality of the patient to such an extent that he is unable to withstand the concomitant sepsis. It causes an additional trauma to the already devitalized tissues and consequently facilitates absorption of septic material. In a robust individual these things may not make any great difference as to the ultimate result, but in a very delicate individual or one whose strength has been greatly impaired by the accident, it may be just the one thing that will be too much for the patient to bear. It is not an uncommon thing to see one of these patients come from the dressing room utterly exhausted, and it is surely well worth our while to try to eliminate this evil whenever we possibly can.

In compound fractures of the lower two-thirds of the femur, where plaster-of-Paris dressing will often not hold the fragments in good apposition, I have found the pneumatic splint quite satisfactory. In other compound fractures, where a fenestrated plaster-of-Paris dressing can be employed, I have found the method recommended by Dr. Hugh Crouse of El Paso, Texas, very useful. It consists as follows: When the wound has been properly disinfected and the fracture ends are in good apposition, a small sterile dressing, covering the wound and the surrounding skin for an inch or two in every direction, is applied. Then the remaining portion of the limb is wrapped in cotton and covered by a bandage and the plaster dressing applied in the usual manner, strengthening it as required with wood, steel or wire strips. The fenestrum is then made and the small dressing covering the wound removed. A piece of sterile gauze of several thicknesses is now cut so as to overlap the wound edges a little, the exposed skin is carefully dried with ether and sterile gauze, and then the preparation, which I shall describe directly, is carefully packed beneath the limb and the cast. The preparation or mixture is secured by dissolving small pieces of any good dental crown rubber in commercial chloroform, using enough of the rubber to make a semi-fluid mucilaginous paste, into which small pieces of lamb's wool are placed. It is then applied as directed, forming an impervious dam, which thoroughly protects the cast against soiling.

I have recently had a young man under my care who came to me with a secondarily infected tubercular ankle. After the resection it became necessary to institute through and through drainage. I applied a plaster-of-Paris cast with two fenestra. The cast was protected in this manner, and although there was considerable discharge at first, and although the patient was allowed to walk on the foot as much as he wished, the cast was found perfectly sweet and clean on its removal eight weeks after its

application. I am sure that the use of this preparation is the most important thing I have learned in the treatment of compound fractures in the last ten years.

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HYDATIDIFORM MOLE, WITH REPORT OF SEVEN CASES.

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CHICAGO.

(Illustrated.)

According to Gebhardt, the microscopic structure of syncytioma malignum can not be studied satisfactorily until we have a clear conception of the histologic structure of hydatidiform mole. In hydatidiform mole, we find the same elements as in normal placentation, only that these elements are excessive in number and size. Hydatidiform mole represents a hypertrophic growth of the chorionic covering, accompanied by a drop-sical swelling of the chorionic stroma. As is well known, the covering of the villi consists of two layers, an outer one of deeply staining nucleated protoplasm (syncytium) and an inner layer, Langhans' Zellschicht. The growth concerns both the syncytium and the cell layer of Langhans. The abnormal element is the occurrence of very large cells with immense nuclei in large number, and a decided growth of the syncytium, accompanied by the formation of large vacuoles.¹ That both these layers, syncytium and Langhans' layer, are fetal in origin, and not maternal, is now accepted by most authors.

The earlier prediction made by Hubrecht and Webster as to the fetal origin of both the outer syncytium and the inner layer of Langhans has been later corroborated by Peters in his beautiful description of the youngest human embryo ever obtained. Herman and Stoper of Vienna, in 1905, have verified all the findings of Peters by a systematic examination of the placenta in guinea-pigs from the earliest stage of implantation up to the twenty-first day. The conclusion arrived at was that the syncytium was of fetal and not maternal origin, and had its origin from the placental site.² As to the immediate and remote causes of hydatidiform mole, nothing definite is known. The weight of evidence, according to Finley,³ is in favor of a maternal origin, the vesicular degeneration of the chorionic villi resulting from a disturbed maternal circulation. Failure on the part of the maternal circulation causes a degeneration of the connective tissue stroma of the villi, together with serous infiltration or edema. The syncytium and Langhans' cells penetrate deeper into the decidua, where the nutrition is adequate, a fact which accounts for the unusual proliferation of these epithelial elements in hydatidiform mole. Webster, however, says that the strongest argument against the degeneration of the maternal tissues being a factor which helps to determine the formation of hydatidiform mole is found normally in the decidua reflexa. We find at a very early period that

1. Bandler: Amer. Jour. Obst., August, 1902.

2. Herrman and Stoper: Centralbl. f. Gyn., xxvii, 1905.

3. Finley: Amer. Jour. Obst., March, 1903.

there is a normal degeneration of the reflexa, coagulation necrosis taking place rapidly throughout its tissue, and yet we do not find any special relationship between this change and hydatidiform degeneration in the villi attached to the reflexa. The villi of the chorio leve do not show any tendency to myxomatous change, or to any proliferation on the part of the fetal ectoderm. Such a view, therefore, can not be held for one moment.⁴

Chalezky is inclined to believe that the death of the embryo is the cause, the chorion receiving, in consequence, nutrition intended for the

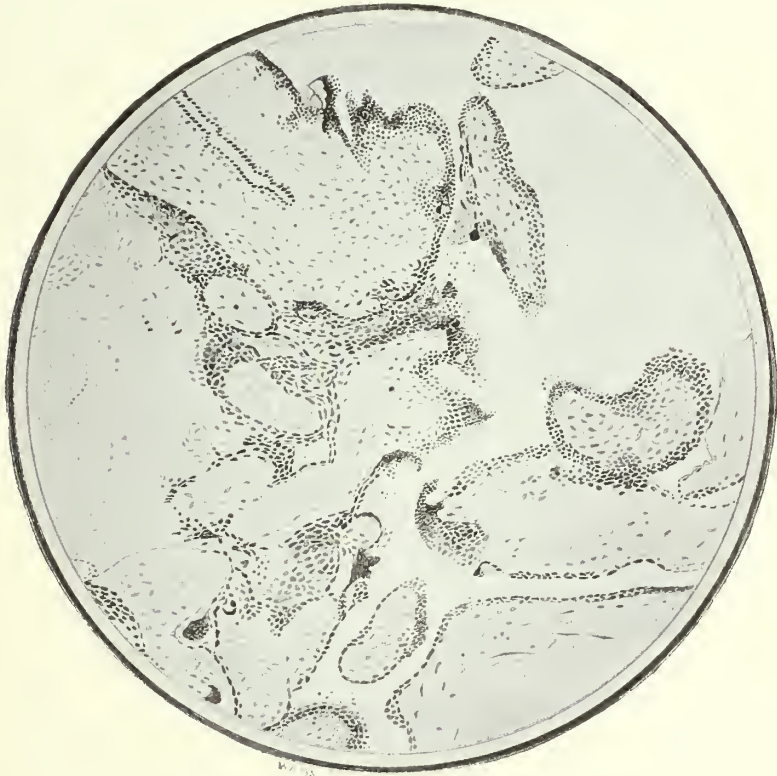


Illustration No. 1.—Section from an early hydatidiform mole, $\times 80$.

fetus. Marchand, however, does not agree with this view, on the ground that, if this was the correct theory, mole pregnancy would occur more frequently.⁵ Gottschalk, in demonstrating specimens taken from two hydatidiform moles, is convinced that his microscopic pictures demonstrate without the least doubt that a typical hydatidiform mole can develop with vesicles the size of a hazel nut, without any marked proliferation of the chorionic epithelium. It consequently follows that the demonstrable chorionic epithelium proliferation in the large vesicular mole has no primary and etiologic significance. The hydatidiform mole

4. Webster: Amer. Jour. Obst., March, 1903.

5. Marchand: Zeitschr. f. Geb. u. Gyn., Bl. xxxii, p. 405.

is very nearly completed before the appearance of any marked chorionic epithelium proliferation; he, therefore, comes to the following conclusion: The degeneration of hydatidiform mole rests primarily on the disturbance of the fetal villi circulation. In consequence of the interference of the return circulation to the embryo, a marked stagnation results and the blood circulation in the villi gradually stops. The more marked chorio-epithelial proliferation of the hydatidiform mole are of a secondary nature and result the minute the degenerated villi of the mole are copiously flushed by the maternal blood, a condition possible only in the extension of the chorion leve, after the destruction of the capsularis.

The polycystic degenerated ovaries found in connection with hydatidiform mole are due to the marked interference of the circulation within the ovarian vessels, have no etiologic significance in the formation of the mole.⁶

The view regarding the function of altered syncytium in helping to induce some such change as is present in hydatidiform mole is not accepted. Normally, as pregnancy advances, the syncytium covering the villi changes somewhat in character, and no distinct Langhans' layer is

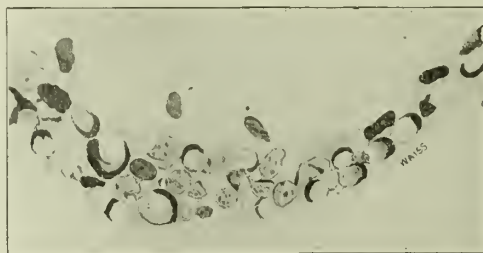


Illustration No. 2.—Vacuolation in the syncytial layer, $\times 800$.

demonstrable, and, according to Webster, the syncytium becomes broken and split up in many places. This degeneration is usually associated with a tendency to fibrin formation in the neighboring maternal blood, but not with any hydatidiform degeneration in the villi.⁷ Marchand separated the destructive mole from malignant growths, on the ground that the mole was different from a characteristic malignant growth. In the former he found no atypical cell proliferation, but villi, where the two epithelial layers maintained their normal relationship to one another. Malignancy following a mole is explained by him in a higher degree and greater persistency of proliferation of the chorionic epithelium than in normal pregnancy. This high degree of proliferation is followed by breaking off of small syncytial masses, which penetrate as wandering cells into the musculature of the uterus and other parts of the maternal organs.⁸

Van Der Hoeven claimed that in the malignant mole there is a tendency of the epithelium to break through the fibrin layer of Nitabusch in large masses. Although we find syncytium in the decidua in normal

6. Gottschalk: *Zeitschr. f. Geb. u. Gyn.*, Bl. III, p. 516.

7. Webster: *Amer. Jour. Obst.*, March, 1903.

8. Marchand: *Zeitschr. f. Geb. u. Gyn.*, Bl. xxxix, No. 173.

pregnancy, we never find them in so large a number at the same time, and we never see such a marked proliferation through the fibrin layer. Either before or after pregnancy, these cells are destroyed by the influence of the maternal tissue or by a gradual loss of their vitality. In the mole, on the other hand, the number of cells that invade the maternal tissue is greatly increased and are of a different sort. They have a stronger tendency to proliferation and penetrate into the muscularis. Their vitality is more marked and they increase as deciduoma.⁹ Neuman laid great stress on the syncytial invasion of the connective tissue stroma in the malignant degeneration of the hydatidiform mole, but most authors agree that this condition is also present under normal conditions.¹⁰

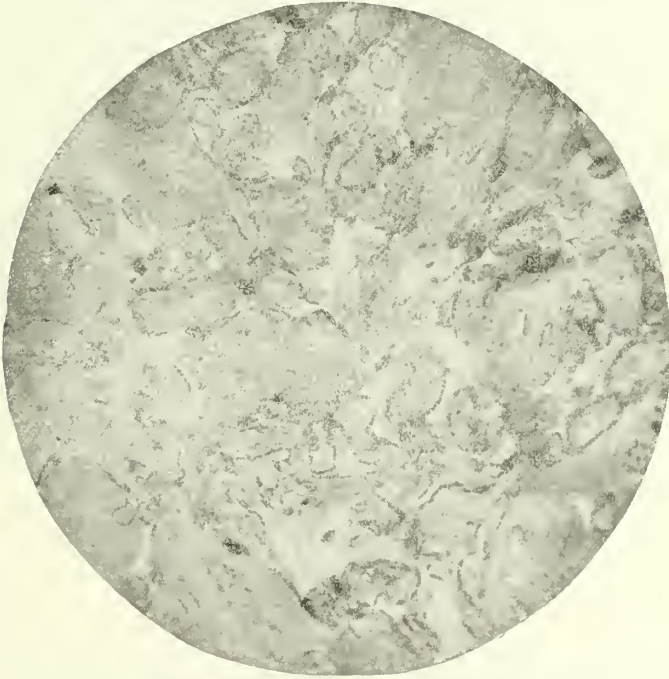


Illustration No. 3.—Section from a full term placenta, showing syncytial layer, $\times 80$.

I have made a careful microscopic examination of more than one hundred sections taken from different parts of five moles, and I have found what, at first glance, looked like a syncytial invasion in the connective tissue stroma in but two sections, but, on closer examination, they proved to be, according to Finley, due to a tangential cutting of the villi. Vacuolation was found in the syncytium in almost all of the larger villi. In most parts of the decidua, there was an increased number of round cells. In many parts of the decidua, necrosis and hyaline degeneration was taking place. I could find no mitosis in any of my specimens. Drawing No. 3 was taken from case No. 5, and shows the so-

9. Van Der Hoeven : *Archiv. f. Gyn.*, Bl. lxii, p. 316.

10. Neumann : *Monatsschr. f. Geb. u. Gyn.*, 1897.

called wandering cells or syncytial masses invading the inflamed decidua. These cells seem to show a preference to wander along the blood vessels. There is no doubt but that we get almost the same picture after normal pregnancy, and it is almost impossible to decide when the elements are normal or when they are abnormal. We also get a like picture of some cases of chorio-epithelioma as we do after hydatidiform mole or after normal pregnancy, and, as Webster says, it is only guess work in a number of cases, even after the most thorough examination is made. By referring to illustrations Nos. 4, 5 and 6 and comparing them you will see how easily one can become confused in these specimens. Illustration

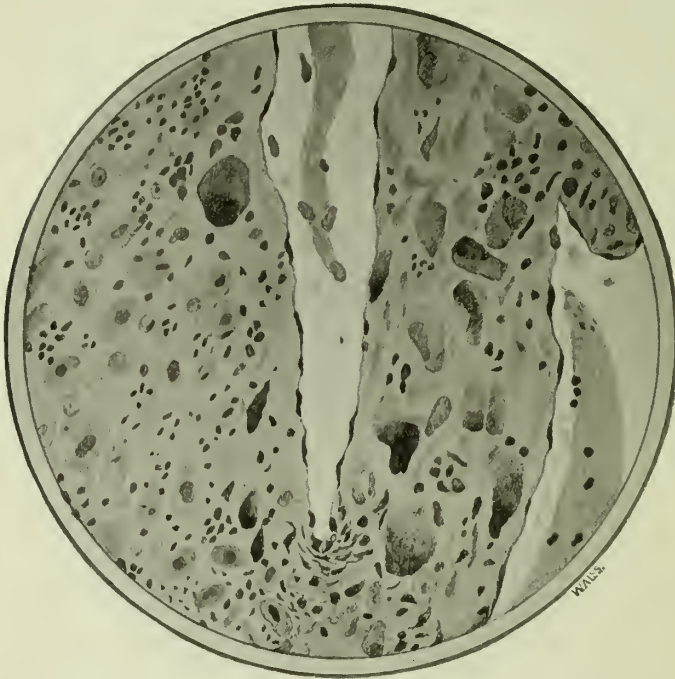


Illustration No. 4. Section from hydatidiform mole, showing invasion of the so-called Wander cells, $\times 480$.

No. 5 was taken from a microscopic specimen taken from the placental site in a 5 to 6 weeks' pregnant uterus. You will note that the syncytium or wandering cells show the same preference for blood vessels as those in hydatidiform mole. Illustration No. 6 was selected from the beautiful collection of Dr. George Schmauch and is from an atypical chorio-epithelioma. You see the same invasion and preference for blood vessels, only in this case, as Van Der Hoeven has explained, we find them in larger number and there seems to be a more marked proliferation than in the two other illustrations.

The following cases I report through the courtesy of Drs. Weisskopf, Miller and Cunningham. Dr. Weisskopf's cases are the following:

CASE 1.—Mrs. O. C. B., aged 43 years. Family history good, personal history good. Multipara, having borne eight children, all living,

no miscarriages. On Nov. 3, 1897, I was called to her house to attend a woman in confinement. When I got there I found the fetus lying between the patient's legs, and also a substance which looked to me like a bunch of California green grapes. There was at this time absolutely no bleeding, as everything was delivered; one fetus, normal (4 to 4½ months) and this bunch of grapes. I had never seen such a condition and did not know what to make of it, and accordingly called in Dr. S. L. Weber. When he arrived he recognized the condition at once and was very much pleased at having been called in, saying that in all his experience he had seen but one case. He asked me to publish this case, which, however, was never done. In this case we had one fetus, perfectly formed, and one hydatid mole degeneration. I have since heard of one more such case, but do not know in whose practice it occurred or

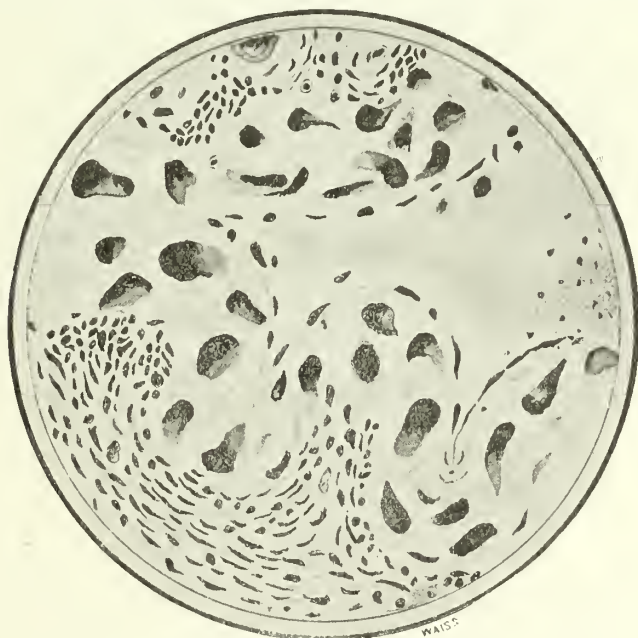


Illustration No. 5.—Section from a five-week pregnant uterus, showing the so-called Wander cells, $\times 480$.

the particulars. This patient has had one child since, and tells me she never felt better in her life.

CASE 2.—Mrs. J. K., aged 39 years. Mother of four living children, two miscarriages. Family and personal history good. Was called in by a midwife, who told me that everything was stuck tight in the womb, and all that she saw that had passed were a few small “globes that looked like pieces of fat.” To control the bleeding, she had used cotton plugs, i. e., pieces of cotton tied together on one common string. She had saved a few pieces, and, on seeing them, a diagnosis was made of hydatidiform mole degeneration. The patient was placed under the influence of chloroform and, with my fingers, I removed the whole mass. This was quite large and seemed to be in a state of decomposition. Specimen was placed in formalin glycerin solution, but did not keep. This patient

died, in 1903, of carcinoma of uterus, (?) for which hysterectomy had been done.

CASE 3.—Mrs. O. B., aged 22. Primipara. Family and personal history good. Called in to see her Dec. 23, 1903. Married one month. Said she had taken ergot, pennyroyal pills and tansy to bring her around, as she had taken cold and her monthly periods had stopped. She was taken with severe cramps at about 11 a. m. and her husband insisted upon a doctor being called. Upon examination, found the os dilated about as large as a silver dollar and a sac-like substance protruding. Diagnosis, abortion. Pains persisted, and in about three hours this sac-like sub-



Illustration No. 6.—Section from an atypical chorio-epithelioma, showing proliferation of syncytial masses, $\times 480$.

stance was expelled. Upon opening the sac, I found a great bunch of hydatids. This case differs from the other three only in one particular, viz.: it was entirely covered by membranes. Examination was made of this specimen at the Columbus Laboratory and was pronounced a mole. This patient is alive and well.

CASE 4.—Miss A. J., aged 21. Family history good, except that in the last six months the mother became afflicted with some mental trouble, and is at present an inmate of Dunning. Personal history good. About four months ago I was called to attend her for cramps in the stomach, complicated with hemorrhage. When I arrived the fetus had already been expelled and was hidden under the bed. Uterus was large, os tightly contracted upon something that felt like placental tissue. I tried to work out this object with my fingers, but could not. On withdrawing my hand, two hydatids came away. Bleeding was now slight, so I tamponed and went home for my instruments. I called again and, under anesthetic, removed a large piece of placental tissue. Patient alive and well.

DR. CUNNINGHAM'S CASE (CASE No. 5).—Mrs. G. F., aged 28. Multipara. Entered St. Anthony's Hospital Sept. 5, 1904. Family history: Father alive and well, aged 64. Mother alive and well, aged 55. Three brothers alive and well, one dead. One sister alive and well, one dead. Previous History: Has had the ordinary diseases of childhood and had typhoid malaria three years ago. Was married at the age of 19. Has had two children, the oldest alive and well at the age of 8, the youngest dead two years. Has had one miscarriage, six years ago, during the first month of pregnancy. Present illness: Patient pregnant about three months. On the 25th of August began to have irregular hemorrhages, which continued more or less up to the time of admission to the hospital. The patient was given an anesthetic, uterus dilated and a hydatidiform mole removed. After this a thorough curettage was performed and the uterus irrigated. Recovery was uneventful. The patient at the present time is alive and well.

DR. MILLER'S CASE (CASE No. 6).—On Feb. 25, 1897, at about 2 a. m., I was called to Mrs. O. H. On arriving I was informed by a midwife that something strange and unusual was coming. Mrs. H. was a medium-sized woman and had had two normal labors previously. On examination I found the abdomen very large, tense and tender. A history of being pregnant about 5½ months. Had been having labor pains about eight hours. On examination I found the vagina filled with a mass that felt like a bunch of grapes. Passing two fingers above and around this mass, I pulled and it came away. I put this in a bowl and proceeded to get more. Pushing part of the mass aside and introducing my hand into the uterus, I brought down more, and, after repeating the procedure, I had a dishpan full of these clusters, which on closer examination were beautifully clear translucent vesicles from the size of a pinhead to a small grape. There was no embryo and very little that resembled placental tissue. The uterus contracted rapidly, and after a douche I left, returning in about eight hours, and found the patient in good condition. On Oct. 31, 1898, I confined Mrs. H. of a healthy child at term, with several more after that. She is alive and well to-day.

My own case is the following:

CASE No. 7.—On March 22, 1903, I was called to see Mrs. R. in consultation with Dr. N. on account of a severe and sudden hemorrhage. Multipara, two children living, no miscarriages. Last pregnancy fifteen months ago and was still nursing child. Had had no return of her menses and was not thought to be pregnant by her physician. The patient had been allowed to bleed for hours, without any attempt being made to empty the uterus. The only thing that was done was the administration of strychnin, whisky and ergot.

I found the patient with all the symptoms of a severe hemorrhage, pulse quickened and diminished in volume, respiration shallow, sighing and labored. The face, mucous membranes and lips blanched. Extremities cold. On vaginal examination, I found the cervix fairly well dilated, and, with one hand making pressure upon the abdomen and two fingers within the uterus, I quickly emptied it. I thought at the time that I was dealing with a retained placenta. After getting the uterus to contract firmly, and stimulating the patient freely, I examined the specimen, which filled an ordinary wash basin, and found that it was a typical hydatidiform mole. The patient did not improve, in spite of the stimulation, and died shortly after.

PROGNOSIS AND TREATMENT OF CEREBRAL APOPLEXY.*

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CHICAGO.

A discussion of any portion of the symptom-complex of cerebral apoplexy must necessarily include cerebral hemorrhage, thrombosis and embolism. Prognosis: Hemorrhage is the most dangerous to life. Many patients die in a first attack, many more during a second or third stroke. The size of the ruptured vessel and the situation of the hemorrhage determine the severity of the case. If the pons or the medulla is the seat of the lesion, death is almost certain. If the hemorrhage is very profuse, as when a large vessel gives way, it may break into the ventricles or reach the surface of the brain. In either event, the prognosis is hopeless. Most cases of apoplexy with fatal termination have been instances of hemorrhage. In cases that survive the direct effects of hemorrhage, this has usually come from a small vessel, and in these the outlook for recovery is better than in thrombosis. It can be explained by the fact that most hemorrhages are either cortical, when they occur in the membranes overlying the cortex, or capsular, when they usually take place just outside the internal capsule, and that the motor tracts in many instances are not destroyed, but suffer merely from compression. With the shrinking of the blood clot, restoration of function in the motor paths may and often does take place even weeks and months after a stroke.

In thrombosis, where the paralysis depends upon softening and direct destruction of brain tissue, it is quite otherwise. Here the effects are permanent even when the cause giving rise to arterial plugging is a syphilitic endarteritis. This statement needs emphasis because of the prevailing notion among practitioners that all brain accidents caused by syphilis are curable. A complete arterial blockade that persists forty-eight hours produces death of the parts depending for life entirely upon the thrombosed vessel, regardless of underlying conditions. While an attack of apoplexy induced by thrombosis with its gradual onset, preservation of consciousness and absence of stormy features in most cases appears less harmful than that of hemorrhage, the prognosis for recovery from paralysis is not as favorable. Besides, the damage to the arteries in thrombosis is more widespread. One attack is usually only a signal for the recurrence of a number of arterial accidents.

Embolism offers a more favorable prognosis than either of the other two conditions, except when one of the large capsular arteries has been suddenly plugged; in that event, the prognosis is similar to thrombosis in the same location. In many cases of embolism, paralysis entirely disappears after days or weeks, because the patient is most often a young individual who has healthy arteries, capable of establishing and maintaining a collateral circulation. Contrast with him the subject of

thrombosis whose arteries are thickened and barely able to supply sufficient nutrition to the parts dependent upon them, and we can understand why it is that territorial expansion in the shape of a collateral circulation is here impossible.

Of the three conditions, then, hemorrhage gives the most unfavorable prognosis as regards an individual attack, and for recovery of usefulness of paralyzed parts embolism gives the best prognosis; hemorrhage comes next and thrombosis last.

Treatment: Under this caption only guiding principles can be mentioned; details of treatment must be left to individual choice. The management of a case of apoplexy resolves itself into (1) prophylaxis, that is, the prevention of apoplexy; (2) the management of the attack, and (3) the treatment of the paralysis following apoplexy.

1. Under prophylaxis, we may state in general terms that an individual with arterial disease should so regulate his life that the wear and tear upon his circulatory apparatus is reduced to a minimum. The treatment is practically identical with that of arteriosclerosis and weak heart.

2. The attack. As regards hemorrhage, it is questionable whether surgical or medicinal means are ever capable of arresting it, excepting those few rare cases with positive signs of progressive meningeal or cortical hemorrhage in which surgery has saved lives. Spontaneous arrest of hemorrhage depends upon an equalization of the intracerebral pressure, on the one hand, and the arterial pressure in front of the torn artery, on the other. Both are, as it were, sparring for an opening; if the pressure in the arterial current be the greater, blood will continue to plough up the brain mass until either the ventricles or the surface of the brain has been reached, which usually means a fatality. If, on the other hand, the blood pressure in the arteries is lowered, as it usually is after a time, the resisting brain mass with the freshly poured out hemorrhagic material offer an effective barrier against the continuance of hemorrhage. The vital indication for treatment is, then, the lowering of arterial pressure. To effect this, we interdict all kinds of movement, place the patient in bed with the head slightly raised. A brisk purge of one or two drops of croton oil in sweet oil is dropped upon the tongue, and heat in the form of hot cloths and mustard plasters may be applied to the lower extremities. When the diagnosis of hemorrhage has seemed quite certain, adrenalin hypodermically or by rectum has been tried with benefit. Aconite and veratrum to depress the heart's action are favorite drugs. Venesection has a legitimate place in the treatment of hemorrhage; from twelve to fifteen ounces of blood should be abstracted immediately or within a few hours after the onset of the stroke. It is indicated in plethoric individuals with throbbing carotids and tense and full pulse, cyanosed face and labored breathing. In many cases we will have to content ourselves with less drastic measures. The term "watchful expectancy," borrowed from obstetricians, will also apply here. While waiting for developments, several important matters demand our attention. The bladder will need catheterization about once in three or

four hours, or else we will have retention and cystitis, with probable death. The patient's posture requires frequent changing in order to prevent hypostatic pneumonia, a complication that sometimes carries off the patient even if he survives the attack. The lungs must be examined within the first twenty-four hours and frequently afterward. If signs of pneumonia are detected, the patient should be placed on the opposite healthy side, which is usually the side of the lesion in the brain. This will have the double effect of facilitating respiration and expectoration and will also prevent the clot from gravitating inward toward the ventricles. Another grave danger is "acute bedsores," which occasionally follows cerebral hemorrhage and which we must endeavor to prevent if possible, as a fatal termination from this cause is common. Prevention here, as elsewhere, is better than cure. This can, in most instances, be effected by scrupulous cleanliness and frequent changes of position. If an abrasion is found, aseptic and antiseptic dressings should be applied and the patient placed upon an air cushion or water bed. As will be observed, the apoplectic has to run the gauntlet of many an unseen foe, each one, in turn, ready to demolish him if the other has allowed him to escape. The various complications must, therefore, be constantly borne in mind. Regarding the feeding of these patients no great anxiety need be felt. They should be given cold milk for the first three or four days whenever they are hungry. If swallowing is impossible, milk may be introduced into the stomach by means of a nasal tube.

In thrombosis and embolism we have directly opposite conditions to those that prevail in hemorrhage. Instead of high blood pressure with full arteries, there are low blood pressure, weak heart and an arterial blockade which causes anemia and later death of brain tissue. Here it is imperative to make a strenuous effort to drive the blood through a narrowed artery or to dislodge, if possible, an embolus from a large calibered vessel. The head must be lowered so as to permit a freer blood current to the brain, and heart stimulants, such as strychnia, strophanthus and alcohol, must be freely used; the diet should be generous and everything possible must be done to keep the anemic and starving brain from falling a prey to softening. Indecision or measures applied here that fit a case of hemorrhage mean a hastening of permanent paralysis. Judicious treatment, if begun early, before the paralysis has completely developed, may limit the paralysis to a minimum or even cause a return to normal conditions. The arteries should be dilated and the brain flushed by hypodermic injections of nitroglycerin, 1/100 of a grain in brandy every hour for a few doses. Hot drinks and beer should be administered to raise arterial blood pressure, and saline infusions appear to be in order. Whenever a positive diagnosis of the underlying condition in apoplexy can not be made, to do too little is better than to do too much. Symptoms should be watched and combated as they arise. There is still enough work left for the practitioner, if he attends to bladder, bowels, dietary, strict cleanliness, and prevents complications. One danger that awaits all forms of apoplexy during the first few days is the development of a cerebritis in or about the clot or the softened area.

This manifests itself by a sudden rise in temperature, with perhaps convulsions and a recurrence of coma. The treatment will be ice to the head, antipyretics, cool sponging and laxatives. The prognosis of this complication is extremely grave and medication seems to be of little value.

3. The after-treatment of the paralysis is the same for all forms of apoplectic stroke. Galvanism has been advised, but very few still persist in its use, as it appears to be devoid of benefit. Faradization of *museles* seems to be strongly indicated and should be begun early, within a few days after the stroke, or after the symptoms of the attack have subsided. Systematic passive and active exercise of the paretic limbs have the highest indorsement. H. Munk has proven experimentally that passive movements of five minutes' duration twice daily were sufficient to prevent secondary contractures in the paralyzed limbs of animals, while after a discontinuance of passive exercise contractures appeared which did not yield to any amount of passive movement undertaken subsequently. Passive exercises should be begun two or three days after a stroke and be persisted in for months, if results are to be obtained. In the application of massage and electricity it is important to remember that only the weak muscles need stimulation; the stronger muscles are already too powerful and, being unopposed, produce the various contractures. Indiscriminate stimulation of *museles* is worse than useless. Applications should be made to the extensors of the upper extremity and the external and anterior group of muscles below the knee. The patient should be encouraged to stand and walk as early as the second or third week after the attack. The sickle-gait in hemiplegia can be largely prevented if patients will make an earnest effort to walk properly by constantly sending down voluntary impulses which eventually become automatic, instead of walking in a go-as-you-please fashion. The use of a splint of cardboard to straighten the overflexed hand and fingers in hemiplegia may occasionally overcome these obstinate contractures. A splint so shaped as to keep the foot at right angles to the leg is often useful in preventing the contracture of the foot in hyperextension. To be successful, all of these measures must be resorted to very early in the case. In conclusion, it is necessary to impress upon patients the necessity of avoiding excitement, physical and mental strain, mistakes in diet, alcohol, constipation and unhygienic living, if they wish to prolong life. By following a strict régime I have known patients to live fifteen and twenty years after an apoplectic stroke.

100 State Street.

CEREBRAL LOCALIZATION IN APOPLEXY.

SYDNEY KUH, M.D.

CHICAGO.

While but a few years ago the question of cerebral localization of apoplexy was one of academic interest only, it has attained practical importance since the surgeon attempts to treat these troubles with the knife—more often, I am afraid, than conditions warrant surgical inter-

ference. For our purpose, it will be necessary to distinguish sharply between two groups of symptoms: Those which accompany the development of the apoplectic "stroke," which, in part at least, are only temporary, and the later ones which represent the more or less permanent loss of function. Of these the former are due, in part to the hemorrhage or acute anemia proper, to the sudden and very pronounced increase of intracranial pressure and to an evanescent interference with the circulation of blood, lymph and cerebrospinal fluid in parts some distance from the seat of the lesion itself. They do not vary greatly in character, the differences being those of degree rather than of kind. During this early period we are sometimes not even able to tell which side of the body is affected. We may find a flaccid paralysis of all four extremities. If the coma be less profound, the greater degree of flaccidity existing on one side will indicate where we may reasonably expect permanent palsy. With it we will often see conjugate deviation of head and eyes, lasting but a short time. When the state of the patient's consciousness permits us to test sensation, one side of the body will usually show more or less anesthesia, and a unilateral superficial loss of reflexes may indicate the side of the lesion, even before any difference in the deep reflexes can be made out. Weakness of one facial nerve and hypotonicity of one side of the body are of similar value. Deep coma suggests, but does not prove, that the lesion is probably not near the cortex. The skin is usually found to be cooler on the paralyzed side at the very beginning; then its temperature rises above that of the other side, to become lower again in the later stages. According to Gowers, hemianopsia is a frequent phenomenon of short duration during the earliest period, as is some disturbance of articulation, most commonly in the form either of dysarthria or bradyarthria. Mellituria, if it occur very early, suggests a lesion near the medulla oblongata.

Within 24 to 48 hours after the "stroke" has occurred, the permanent focal symptoms usually may be found. It need hardly be mentioned here that we look for the seat of the lesion in that hemisphere of the brain which is opposite to the side of the body which suffers, and in order to avoid constant repetitions only the exceptions to this rule will be mentioned especially.

Lesions within the cortex and near it are rarely the cause of apoplexy. The symptoms caused by them vary, of course, according to the seat of the focus. They have these points, however, in common: For anatomic reasons, the symptoms usually develop rather slowly, unconsciousness is often absent or else comes on gradually and is only intermittently present. The "seizure" begins with vertigo, diplopia, cephalic sensations, headache, tinnitus, etc., followed by epileptiform twitching in the arm, leg or face or perhaps an aphasia, leaving as a permanent symptom usually only a slight weakness, of a monoplegic or diplegic type. If it be in the so-called prefrontal region, conjugate deviation of eyes and head toward the affected side, less frequently weakness of the superior rectus or abducens with diplopia may be seen. Extensive defects, especially if they involve both frontal lobes, cause mental

weakness, loss of memory, lack of attention and childish, silly behavior: if located in the left side are said to give rise to what German authors have called "Witzelsucht," i. e., a rather unsuccessful tendency to affect wit and a moral deterioration.

Destruction of a portion or all of the so-called motor area will paralyze that part of the body, the movements of which are controlled by that region. As to the extent of this motor area, we have been compelled to modify our views very materially during the last few years. Sherrington and Gruenbaum, in a number of publications, have made the claim that only the precentral gyrus and the paracentral lobule, and not the postcentral gyrus, were motor in function. Campell, in his "Histologic Studies on the Localization of Cerebral Function," has given convincing proofs of the correctness of this view. It is, at least, very probable that the postcentral convolution, formerly thought to be motor, controls "common sensation." Cortical anesthesia, when present, has the same tendency as cortical paralysis, i. e., it is most frequently limited in extent; it is, furthermore, temporary only in most cases, and is usually dissociated. Inability to localize tactile or painful impressions and loss of muscular sense are often met with.

Let me state again, as I have done once before, that Jacksonian epilepsy may in rare instances be due to lesions affecting parts of the cerebrum other than the cortex, as, for instance, the centrum ovale, capsula interna, corpus striatum or thalamus opticus. Once I saw it in an abscess of the cerebellum. Among the rarer symptoms following cortical lesions, posthemiplegic hemiataxia and hemichorea should be noted. Perhaps there is no one symptom of cortical origin that is better known than that of motor aphasia. It is commonly supposed to be due to destruction of the foot of the third frontal convolution. If Campell is correct, we must also modify our views as to the location of "Broca's" center which, he claims, is less restricted in area than was generally supposed and extends farther forward. Other cortical symptoms and the seat of the lesions causing them are briefly as follows: Loss of muscular and stereognostic sense point to involvement of the parietal lobe; motor agraphia to a diseased state of the base of the middle frontal gyrus; defects in the Island of Reil, according to v. Monakow, produce "a mixed form of speech defect, in which, to a greater or less extent, all the components of speech are involved, and in which signs of motor aphasia will predominate, if the lesion be in the anterior division of the insula, and signs of sensory aphasia if in the posterior."

Psychic blindness, i. e., inability to recognize and interpret objects seen, causing difficulty of orientation in space, indicates a large lesion in the parieto-occipital lobe, more probably on the left side. Alexia, or the inability to comprehend written or printed words without impairment of vision, suggests the left angular gyrus and second occipital convolution; loss of color perception, the posterior end of the lingual lobule. Optical aphasia, which consists in the loss of the ability to name seen objects correctly, although they are recognized, without calling other senses, such as that of touch, into play, points to a lesion in the white

substance of the left occipital lobe. The location of auditory conceptions is probably in the superior temporal lobe, though there is still some doubt as to its exact seat. Word deafness, or inability to comprehend spoken words, though they be heard, has, as far as I know, never been seen as an isolated symptom. What little clinical evidence there is on the subject also points to the left superior temporal lobe. Other areas have been designated as the seat of the olfactory and gustatory senses, as the centers controlling respiration, the sphincters, surface temperature, etc., but, since their value for diagnostic purposes is practically *nil*, I shall not bore you by describing them.

When the internal capsule is the seat of extensive disease, hemiplegia with hemianesthesia results. The result of smaller lesions may be readily constructed, if we remember that the order of representation of movement is from before back as follows: Opening and turning of eyes, opening of mouth, turning of head and eyes simultaneously, turning of head alone, moving of tongue, of angle of mouth, of shoulder, elbow, wrist, fingers, thumb, hip, ankle, knee, hallux, toe, and that this is followed by the tracts for common sensation, hearing and vision. Of these tracts, the motor ones appear to be by far the most vulnerable, hemianesthesia is usually temporary only, hemianopsia is both less frequent and less persistent, unilateral deafness is quite uncommon. Loss of sensation is not complete, that is, there is hypesthesia rather than anesthesia, unless the case be one of organic hemiplegia with functional hemianesthesia, a combination which appears to be far from unusual. Severe neuralgiform pain on the paralyzed side is supposed to be a most certain indication of capsular lesion. Other symptoms commonly seen are those due to involvement of the large central ganglia. Of these the lenticular nucleus is very frequently affected by apoplexy and, if the lesion be limited to it, the result is a typical "stroke" with unconsciousness and hemiplegia, of which the former usually disappears rapidly, the latter slowly. The same symptoms result from disease in the corpus striatum, excepting that the facial and hypoglossal nerves usually suffer to a greater degree, as do the muscles of articulation and mastication. If the cause of the apoplexy be located in the optic thalamus, we again have hemiplegia, difficulty in articulation, frequently hemianesthesia, which is more persistent than that caused by lesions in either the lenticular nucleus or the corpus striatum and may even persist after the hemiplegia has disappeared. The hemiplegia is always transient, if the lesion is limited to the optic thalamus, but hemianopsia with hemianopic reaction of the pupil may be permanent. Other persistent symptoms which are met with occasionally are posthemiplegic chorea, athetosis or ataxia, movements resembling the intention tremor of disseminated sclerosis, frequently associated with parasthesia, disturbance of muscular sense, hemianesthesia or violent pain in the extremities, trembling of the Parkinson type, loss of mimic expression, spasmodic laughing and crying.

The corpora quadrigemina may be the seat of hemorrhages, usually very limited in extent; hence there is no unconsciousness, as a rule. Since the pedunculi are almost certain to be involved the result will be

hemiplegia with hemianesthesia, often with alternating paralysis of the oculomotor nerve.

Lesions within the pons are common. They constitute no less than 10 per cent. of all hemorrhages (v. Zonakow). The initial symptoms are, as a rule, of a very grave character and may even cause death after a few hours. After they have subsided, unilateral epileptiform attacks are frequent. Trismus is not a rare symptom. The resulting hemiplegia differs from that caused by a lesion higher up only in this: that the muscles of the trunk are more distinctly weakened. Alternating paralysis of the facial and abducens, early miosis, severe vomiting and a great mortality (60 per cent., Bode) are characteristic.

Disease of the medulla oblongata results in the well-known symptoms of bulbar paralysis, often unilateral, or more frequently in a very rapid fatal termination.

This is a hasty review of the most important and common localizing symptoms of apoplexy. It demonstrates one thing, and that is the great uncertainty that still exists when we attempt to determine the exact location of a lesion within the cranial cavity, and that is, I believe, a most important lesson. If it is often impossible to state with any degree of certainty whether a case be one of hemorrhage, of thrombosis or embolism, if, furthermore, but slight certainty exists as to the seat of that lesion, then any active treatment, unless it be made necessary by an *indicatio vitalis*, means great danger to the patient and a most serious responsibility to the physician or surgeon.

ILLINOIS STATE MEDICAL SOCIETY.

**Minutes of the Fifty-sixth Annual Meeting held at Springfield,
May 15, 16 and 17, 1906.**

FIRST GENERAL MEETING.

The society met in the auditorium of the First Methodist Episcopal Church, at 9:30 a. m., May 15, and was called to order by Dr. Henry C. Mitchell of Carbondale. Prayer was offered by the Rev. N. L. Lyon of Springfield, after which Dr. W. O. Langdon of Springfield was introduced and made a verbal report on behalf of the local committee of arrangements as follows: As chairman of the committee of arrangements for your reception in Springfield I can only touch this morning upon certain features which may be termed those of recreation. The financial report of the committee will be made later. Your committee of arrangements is composed of Dr. S. E. Munson, who is chairman of the reception committee; Dr. L. C. Taylor, chairman of the committee on halls and hotels; Dr. George N. Kreider, chairman of the committee on entertainment; Dr. R. D. Berry, chairman of the committee for the entertainment of visiting ladies; Dr. B. B. Griffith, chairman of the committee on finance; Dr. E. P. Bartlett, chairman of the committee on exhibits, and Dr. A. D. Taylor, chairman of the committee on transportation, and myself, chairman of the committee. Each of these gentlemen has appointed other medical men as subcommittees, and we have tried to cover the ground very thoroughly. Nothing has been left undone. In passing, I wish to publicly thank the gentlemen of my committee and subcommittees for the efficiency and zeal they have displayed. Every man has been willing at all times to do whatever duties were assigned to him. This evening, by reference to the program, you will see that there will be an organ recital by Professor V. E. Henshie, and address of welcome by Hon. J. M. Graham, vocal solos by Miss Bessie O'Brien, the president's address, and an address by Governor Deneen. These exercises will be followed by a reception at the Governor's mansion to the members and guests of the Illinois State Medical Society. To-morrow, Wednesday, there will be a carriage drive about the city, and the different points of interest, for the benefit of the visiting ladies. At the Washington park, at 5:30, the entertainment committee will provide what may be called a picnic lunch, with music rendered by the park band, to be followed by a theatrical or vaudeville performance. Your committee has nothing further to report at this time.

The president stated that immediately after the adjournment of the general meeting the sections would be called to order. The medical sec-

tion would convene in this room, while the surgical section would meet in an upper room of the building. Adjourned.

SECOND GENERAL MEETING.

ADDRESS OF WELCOME, HON. J. M. GRAHAM, SPRINGFIELD.

The society reassembled at 8 p. m., May 15, at the First Methodist Episcopal Church, with Dr. W. K. Newcomb, the first vice-president, in the chair. An address of welcome was delivered by Hon. J. M. Graham.

In the absence of Mayor Devereaux, and in his behalf, I have the honor and the very great pleasure of bidding you welcome to the Capitol City, the flower city of Illinois, and I assure you it is not a mere formal welcome, but a very real, sincere and hearty one. In extending to you this welcome, and with it the wish that your session may be a very successful one, I realize the great importance of your calling and the work done for humanity by men of your profession. I am mindful of what dreadful things pain and suffering and disease are, and of how the physician spends his life in fighting them and minimizing their ravages, and I can in some degree appreciate how much less of pain and suffering and misery there is among the children of men and how much more of happiness there is because of your noble work.

Such a body of citizens should wield tremendous influence in society and in the state in matters outside your profession as well as those pertaining to it. Sensible, conservative people look to you to take the initiative in matters pertaining to the public health. They know you have the special knowledge which makes you competent to judge in such matters and they look to you to take such action as is conducive to public health and consistent with the high ethical standards of your profession. And if what we have been lately reading in the public magazines, notably *Collier's Weekly*, be true, it is certainly time for you to act. If selfish men, from greed of gain, are, under false pretenses, inducing a suffering and foolish public to become habitual users of nerve and mind destroying drugs, under the name of patent medicines, it surely seems to me you owe it to yourselves, to your profession, and to the public to sound in no uncertain words, a note of warning.

In flaming advertisements symptoms are described, and a remedy offered guaranteed to cure anything from corns to heart failure, and as drowning men are said to catch at straws, so thoughtless sufferers reach for a supposed cure which temporarily relieves pain by dulling sensibility only to fasten on the victim a body and mind destroying habit infinitely worse than the original trouble and more relentless than the Old Man of the Sea. Surely, I say, a body of the character, dignity, and patriotism of this one should speak out in the interest of public health, in the interest of the public good, in the interest of tens of thousands of unborn children, denouncing the nefarious commerce in the lives and health of men.

Men of your profession have made themselves indispensable to humanity. From the cradle to the grave we need you. If "all the world's a stage, and all the men and women merely players," who have their

exits and their entrances, it at once appears how important a part you take in life's great drama. You preside when the various players on this great stage make their debut, you are generally there when they make their exit (some who are jealous of you say you help them on both occasions), and quite often, between entrance and exit, we, the players, bring our troubles to you, and, quite often, we leave them with you, and incidentally, of course, we leave with you something we think a whole lot more of than we do of our ills. But even the doctors must have something to live upon you know.

Men of my profession sometimes feel a little jealous of the constant part you play among the players on life's stage. While each new citizen of the world has to pay tribute to you, even for making his debut, we rarely get a chance at him till adult life, or at least till he is old enough to get into trouble. True, we try to make up for that after he makes his exit, after he has shuffled off this mortal coil, and the row begins over his will. What wonder is it, then, that we welcome you to Springfield. We are so proud of our city we want you to see it and enjoy its beauty, and we feel that you are worthy the honor of even a permanent residence in it, which we think is the highest compliment we could pay you. We want you to enjoy yourselves; to see all that is worth seeing; to admire what is admirable. We ask you to visit your magnificent capitol building and the spacious armory. We want you to see what we have done, thus far, in the development of a park system which we hope ultimately to make worthy of the capital of Illinois. We want you to visit the home of the greatest state fair on earth. We want you to visit the former home of our departed president, and after you have visited the home we want you to reverently go out to the silent city of the dead, God's acre, beautiful Oak Ridge, and pay your tribute of respectful affection to the memory of that kind, patient, gentle, loving and honored man, America's greatest citizen, Abraham Lincoln. Mr. President, ladies and gentlemen, in behalf of Mayor Devereaux, I tender you the freedom of the city during your stay among us, and again I assure you, you are very welcome.

An organ recital was given by Professor V. E. Henshie, and vocal solos were rendered by Miss Bessie O'Brien.

President H. C. Mitchell of Carbondale delivered the address. He selected for his subject, "Popular Diffusion of Medical Knowledge." President Mitchell was followed by Governor Charles S. Deneen, who delivered an address on the subject of Crime as a Social Disease. Dr. M. S. Marcy of Peoria contributed a poem, entitled, "Springfield," after which the society adjourned to attend a reception given by Governor and Mrs. Deneen at the executive mansion.

THIRD GENERAL MEETING.

The society met at 11 a. m., May 17, in general session, and was called to order by the president. The secretary made a brief report of the work of the house of delegates, announcing the officers elected, reports of committees, etc. The retiring president, Dr. Mitchell, appointed Drs. James.

H. Stowell and M. S. Marey to escort the newly-elected president, Dr. Percy, to the platform.

Dr. Mitchell, in introducing his successor, said: Gentlemen of the Illinois State Medical Society: In surrendering the gavel of the society today to my duly elected successor in office, I am performing a very pleasant duty, because I know that it is passing into able hands. When I say able hands, I mean it in its broadest sense. I have stood on the firing line for years with our newly-elected president, and I know he is never frightened by the smell of the smoke of battle, and he can always be found at his post of duty, struggling for the cause he espouses, and, under his able management, I predict for the state society one of the most prosperous years in its existence. (Applause.)

Dr. Percy, in accepting the presidency, said: It is unnecessary for me, Mr. President, ladies and gentlemen, to say that this must be the proudest moment of any man's life. I believe I have always striven in my work as a medical man to listen for the applause of the profession rather than that of the rabble, and although I am afraid you have made a mistake, it will not be known until this scene is enacted again next year. However, I promise you I shall do my best to come somewhere near the work of my predecessors, from Rouse of Peoria, who was the first president, to the one who has just laid down the work. I think the administration of every president should stand for something, for some distinctive work in this great society. Just what line of work I shall endeavor to take up as most useful for the society and for the state, I have not yet decided, but I know that I cannot do this work as it should be done without your help, without the suggestions that you can give me, and I hope that as the days of the year we have entered upon go by, if there is anything that any of you connected with the branch societies or with the association work in any way of this society, are in a position to know, that I can perhaps help you in, I hope you will command me, and, in this way, by working together, we can leave the society next year in a better position than it has ever been before. Words can but inadequately convey my appreciation of what you have done for me. (Applause.)

Drs. W. H. Davis and Robert Gillmore offered the following resolution, which was seconded by several members, and unanimously adopted:

Resolved, That it is the sense of the Illinois State Medical Society that a vote of thanks be extended to *Collier's Weekly* and *The Ladies' Home Journal* for their pioneer work in exposing the patent medicine nostrum evil; that this resolution be incorporated in the minutes of the fifty-sixth annual meeting, and a copy forwarded to *Collier's Weekly* and to *The Ladies' Home Journal*.

Dr. C. W. Lillie offered the following, which was unanimously adopted:

Resolved, That the Illinois State Medical Society recommends to all affiliated county societies to make no examinations for old line life insurance companies for a fee of less than \$5.00.

On motion, the general meeting then adjourned, *sine die*.

E. W. WEIS, *Secretary*.

MINUTES OF THE HOUSE OF DELEGATES.

FIRST SESSION—MAY 15, 1906.

The House of Delegates was called to order at 12 m. by the president, Dr. Mitchell. The secretary called the roll. Dr. James H. Stowell outlined the work of the committee on scientific work. Dr. Langdon, chairman of the committee on arrangements, asked for further time to make a report covering the amount of receipts and expenses. On motion the committee was given until Thursday morning to make its final report at the general meeting. Dr. Kreider, member of the committee on medical defense, made a report of the by-laws, as recommended by that committee, and asked that the amendments be over until to-morrow for final action. The amendments are as follows:

To amend the By-Laws Chapter IX, Section 1, so as to read: The standing committees shall be as follows: A committee on scientific work, a committee on medical legislation, a committee on public policy, a committee on arrangements, a medico-legal committee, and such other committees as may be necessary. Such committees shall be elected by the House of Delegates unless otherwise provided for.

To amend Chapter IX by adding Section 6, to read as follows: The medico-legal committee shall consist of three members from Cook county, and one member from each other county in the state. They shall be elected by the House of Delegates upon the recommendations of the various county societies. The term of service of each member of this committee shall be three years, provided that in the original organization of this committee the services shall be grouped by lot into three divisions, with terms expiring in 1, 2 and 3 years respectively. This committee shall organize by electing a chairman, a secretary, and an executive committee of five. It shall be the duty of the members of this committee severally or collectively to investigate all claims of malpractice against members, to adjust such claims in accordance with equity where possible, and if in their judgment an adjustment is impossible, or the claim is unjust, or the damage sought is excessive, to lend such help, aid and counsel as they may see fit.

They shall effect such organization as they see fit and adopt rules for their guidance and for the guidance of members of the state society on medico-legal matters. They shall be empowered to contract with such agents as they may deem best. They shall have charge of the medico-legal fund, which fund shall be secured as follows: Each member of the state society shall be assessed \$1 a year for this fund alone. This fund shall be paid along with the other dues and through the same channels.

When the report of the special committee on the prevention of tuberculosis was called for, Dr. Pettit, the chairman, said that the committee has very little to report. While the society inaugurated a crusade against tuberculosis two years ago, and it was the business of the committee to take charge of the work in this state, it was only temporarily in charge of the work. Inasmuch as tuberculosis is a social problem with a medical aspect, it was not deemed wise for the medical profession to take sole charge of the work, to the exclusion of others, so the committee, in connection with others, encouraged the organization of the Illinois Society for the Prevention of Tuberculosis. The purpose of the committee is to act with that organization or with such others as may desire its assistance. The committee has not had much to do, for the reason that the work of the Illinois Society for the Prevention of Tuberculosis is now pretty thoroughly organized in the state, and it is to be hoped that

within the next year the work of this society will be better organized, and then there will be more for this committee to do. It is expected at the next meeting of this society the committee will have something more definite to report. On motion, the report was received and placed on file.

The president stated that during the winter he received a letter from Dr. Colwell, assistant secretary of the Council on Medical Education of the American Medical Association, asking the appointment of a committee of three to act in conjunction with the Council on Medical Education of the American Medical Association. He took it upon himself to appoint this committee, which consisted of Dr. Norbury of Jacksonville, chairman; Dr. Percy, of Galesburg, and Dr. Phemister of LaGrange. He further stated that it would be necessary to amend the constitution to provide for this committee. If agreeable to the House of Delegates he would like to see this committee continued, with Dr. Norbury as chairman for two years longer, Dr. Percy for one year longer, and the place of Dr. Phemister to be filled.

Dr. Pettit offered the following in connection with the statement of the president:

The committee on medical education shall consist of three members; one member shall be elected to serve for one, one for two, and one for three years; thereafter one member shall be elected each year to serve for three years. The functions of this committee shall be (1) to co-operate with the state examining board in matters pertaining to medical education; (2) to make an annual report to the House of Delegates on the existing condition of medical education in the state; (3) to co-operate with the council of education of the American Medical Association in the effort to elevate the standard of medical education in the United States.

Dr. Pettit said that his purpose in offering the resolution was to ratify not only the position taken by the president in appointing a committee, but to make a permanent committee. He offered this as an amendment to the by-laws.

The resolution was seconded by Dr. Harris and adopted.

On behalf of the Cook County Medical Society Dr. Bacon presented for consideration a proposition to increase the representation of the third councilor district in the council of the state society. He said he has been instructed to ask the House of Delegates to make such changes as will give the third district the proper representation. He presented two measures for action, one that the charter be amended. Accordingly, he moved that the president and secretary of the society be instructed to prepare such a change in the charter of the society as to vest the management in a board of fourteen instead of nine trustees, twelve to be elected according to the by-laws, and the president and secretary, ex officio.

In addition to this, he gave notice of amendments to the constitution as follows: Art. VI, Section 1, change nine to twelve. Section 4, change six to seven. Art. IX, Section 2, fourth sentence, change three to four.

Dr. Black seconded the motion. Dr. Ensign moved that the whole matter lie over until to-morrow. This motion was seconded by Dr. Will, and after some discussion, which was participated in by several, the chair put the motion of Dr. Ensign, and as there was some doubt as to the vote,

a division was called for, with the result that twenty-five favored Dr. Ensign's motion, while twenty were opposed to it. It was declared carried.

It was moved and seconded that the House of Delegates now adjourn, to meet at 8 o'clock Wednesday morning. Carried.

SECOND SESSION, MAY 16, 1906.

The House met at 8:15 a. m., and was called to order by the president. Dr. Ensign moved that the annual reports of officers and committees be presented now. Seconded and carried. The secretary presented his annual report.

OTTAWA, ILL., May 8, 1906.

To the House of Delegates of the Illinois State Medical Society:

Your secretary begs leave to present the following report: The council at its meeting in June, 1905, ordered the levy of an assessment of the per capita tax of \$1.50 each, per member of the component societies. Pursuant to this order I notified all component societies of the same, and, with a very few exceptions, it was responded to by May 1, 1906, as follows:

Adams County	\$ 76.50	Jasper County	\$ 3.00
Boone County	30.00	Jefferson County	21.00
Brown County	1.50	Jersey County	15.00
Bond County	33.00	Jo Daviess County	51.00
Bureau County	63.00	Johnson County	21.00
Calhoun County	12.00	Kankakee County	19.50
Carroll County	21.75	Kendall County	21.00
Cass County	27.00	Knox County	57.00
Champaign County	64.50	La Salle County	59.50
Cash, Bloomington meeting.	5.50	Lawrence County	27.00
Clark County	30.75	Lee County	47.00
Clay County	13.50	Livingston County	51.00
Christian County	1.50	Logan County	4.50
Clinton County	22.50	McDonough County	61.50
Coles County	4.50	McLean County	88.50
Committee of arrangements, Rock Island	81.68	Macon County	88.50
Committee of arrangements, Bloomington	1.00	Macoupin County	36.00
Crawford County	33.00	Madison County	4.50
Chicago Medical Society...	1,737.50	Marion County	14.00
Cumberland County	9.00	Marshall County	6.00
DeWitt County	43.50	Mason County	1.50
Douglas County	12.00	Menard County	49.50
Edgar County	27.00	Mercer County	36.00
Edwards County	15.00	Monroe County	22.75
Fayette County	9.00	Montgomery County	10.50
Fulton County	28.50	Morgan County	67.50
Gallatin County	13.50	Moultrie County	18.00
Greene County	24.00	Ogle County	28.50
Grundy County	21.00	Peoria County	130.75
Hamilton County	19.50	Perry County	27.00
Hancock County	43.50	Piatt County	27.00
Hardin County	9.75	Pike County	48.00
Henderson County	13.50	Pulaski County	18.00
Henry County	55.50	Randolph County	27.50
Iroquois-Ford	105.00	Richland County	19.50
Jackson County	37.15	Rock Island	142.50
		St. Clair County	105.00
		Sangamon County	109.50

Scott County	\$ 24.00	Will County	\$ 3.00
Stark County	10.50	Williamson County	27.00
Stephenson County	64.50	Winnebago County	126.00
Subscription	1.50	Woodford County	10.00
Union County	63.00	Vermilion County	117.00
Wabash County	22.50	Fox River Valley Medical	
Warren County	27.00	Association	69.00
Washington County	42.00		
Wayne County	19.50	Total	\$4,996.58
Whiteside County	37.50		

Again it gives me great pleasure to be able to state that the officers of the component societies are taking an increased interest in their work. They are beginning to understand and appreciate the situation more fully, and in the future there will be eliminated one serious hindrance to complete affiliation, namely, the recognition of the fact that the local members of the component societies make the state society, and that all members of the local organizations are, of necessity and fact, members of the Illinois State Medical Society. Heretofore many officers have kept two sets of books, one for their local members, so-called, the other for the affiliating members. This has led to a great deal of confusion. The rosters of the societies are being constantly added to in a way that ought to be satisfactory, but there is considerable need for missionary work in some parts of the state. Charters were issued during the past year to the following counties: Boone, Moultrie, Randolph, Hardin and Hamilton. This completes the organization of every county in the state except Franklin.

Your secretary attended every meeting of the council during the year, as well as the meeting of the committee on scientific work. The committee on scientific work responded to a call and met in Springfield, Jan. 5, 1906, and outlined the necessary program for this meeting. It also adopted a resolution for the consideration of this House, calling attention to the fact that the meetings of this House interfere materially with the attendance of the sections, and urged that either during the time of the sessions of this House the sections do adjourn or vice versa.

At the time of the adoption of the new fiscal year by this House of Delegates at Bloomington in 1904, and during the discussion preceding the adoption, it was suggested that, in the changing of the fiscal year as it had heretofore existed from May to May, to January 1 to December 31, it would create a great deal of confusion in the counties with the members, as well as with the secretaries and treasurers in establishing the time for which membership was paid by these members at that time. This prediction was verified and has led to a great deal of dissatisfaction, as the fiscal year in the local societies, in a great many instances, does not coincide with that of the state society.

Your secretary has urged the local societies to adopt the calendar year to be the fiscal year, and by the advice and concurrence of the council I have accepted the prorata of the per capita tax from May to January, where the new fiscal year has been adopted. This is the only equitable and fair solution of the problem.

E. W. WEIS, *Secretary.*

Examined and found correct.

C. BARLOW,
M. L. HARRIS,
J. H. STEALY,
Auditing Committee.

On motion of Dr. Ensign the report was adopted.

Dr. Ensign presented his report as chairman of the council, as follows:

ANNUAL REPORT OF THE COUNCIL TO THE HOUSE OF DELEGATES OF THE ILLINOIS STATE MEDICAL SOCIETY.

In presenting the report of the council on the present occasion, it should be borne in mind that, owing to a recent change in the law of the State Medical So-

ciety, reinforced by a resolution of the council adopted at Rock Island a year since, it may not be expected to cover a period of more than seven and one-half months, or from May 18 to the close of the year 1905. By this arrangement it is hoped to adjust future reports, as nearly as may be possible, to each recently completed calendar year.

ORGANIZATION OF THE COUNCIL.

The terms of the following councilors, viz., Dr. G. H. Stealy, Freeport, first district; Dr. W. O. Ensign, Rutland, second district; and Dr. W. K. Newcomb, Champaign, eighth district, having expired, they were each re-elected by the House of Delegates, save the last named, who having been chosen first vice-president of the state society, was succeeded by Dr. Columbus Barlow of Robinson as councilor for the eighth district. In the re-organization of the council the same officers were again selected, the same editor retained, and the same members appointed to the committee on the management of the JOURNAL, while the matter of an assistant editor was left in the hands and to the judgment of such committee. A like amount of bonds, viz., \$2,000 each for the secretary and for the treasurer were required, and obtained at the same expense to the society as for the previous year.

MEETINGS OF THE COUNCIL.

But one regular meeting of the council was held prior to 1906, and this was at Chicago on June 22, 1905. Two have since been convened, viz., one at Springfield on January 4, and one at Decatur on April 5, 1906. Although such meetings have not been frequent, much business has been transacted on each occasion named.

APPEALS, GRIEVANCES AND OTHER QUESTIONS.

No new appeals have been formally brought to the attention of the council during the period for which report is herewith made. It will be remembered, however, that at the close of the last report under this head, in the case of Dr. H. P. Pratt vs. The Chicago Medical Society, known as Appeal No. 2, by mutual consent, and for reasons then assigned, the case had been "referred back to the Chicago Medical Society with the request that it hear such appeal when presented." At the meeting of the council in June last, such appeal again came under consideration, resulting, after statements had been verbally made by Dr. Pratt in his own behalf and by Dr. Frank Walls for the Chicago Medical Society, in a motion which then prevailed, viz., "That acting under the spirit of Sections 5 and 6, Chapter X of the By-Laws of the Illinois State Medical Society, we request, of the Chicago Medical Society to know why Dr. H. P. Pratt was not elected a member of such society." This action was followed, at the meeting of the council in January, 1906, by a response from the society, stating that the appellant's application "has been considered by the Chicago Medical Society on numerous occasions, and, at all times, it has been the consensus of the (its) council, that he "should not be accepted as a member of our society." On receiving such reply, it was voted by the council of the state society to be the sense of its members that "the explanation of the Chicago Medical Society is satisfactory and sufficient" in the disposal of such appeal.

Several minor grievances, complaints or questions have come directly to the council, including: 1, a question of ethics in relation to a physician promising remuneration for professional business sent him; 2, a like question relative to bidding for county professional work; 3, the acceptance of members by a component medical society, who decline at the same time to become members of the State Medical Society; 4, the non-receipt of the JOURNAL issues by members; 5, the price and nature of supply of reprints of papers published in the JOURNAL; 6, proper sanitarium advertising; 7, the right of a former life member to the JOURNAL of the State Medical Society, who had been denied membership in a component society under the late plan of organization; 8, unreceipted per capita tax; 9, proper adjustment of per capita tax to the new fiscal year; 10, the right of a county medical society to its name, without a charter of its own directly from the Secretary of State; 11, relative to the general character of the JOURNAL and the place and plan of its publication.

Some of these complaints were found to be either without good cause, to originate from a source not entitled to consideration by this society, or to be readily adjusted on proper explanation. A few have required special action for individual instances, and others a general decision for all cases of a similar character. In the consideration of such questions the council made in substance the following rulings:

1. It is a violation of medical ethics for a physician to offer pay or commission to parties as an inducement to recommend to him patients requiring either medical or surgical treatment; 2, that it is the sense of the council that, under our constitution and by-laws, no one can be a member of his county society who does not at the same time become a member of the state society; 3, that subscriptions in unorganized counties shall be paid directly to the editor; 4, the Chicago Medical Society, having sent a special committee to confer with the council of the state society, at its meeting at Springfield, in January last, and to offer several complaints and some suggestions relative to the JOURNAL, the council voted in substance, that the valuable suggestions of the Chicago Medical Society with reference to the JOURNAL were "in accord with the policy outlined by this council nearly a year" previously, a "consummation of which has been delayed on account of unavoidable circumstances without the control of the council," but which were then under a fair way to be accomplished.

It should here be remarked that many complaints come to the knowledge of the council only through indirect channels, and are often contained in disgruntled communications to the editor, or in insinuations to some other members of the state society, and are unsupported by direct charge or evidence. To most of these the council, as might have been properly expected, has paid little attention. It is not a part of the duties of the council, as some would appear to believe, to take up insinuations or to seek out or follow after complaints for the purpose of its own consideration. Although firmly convinced that unpleasant features, such as professional irregularities, or individual misunderstandings, must of necessity grow less with better organization and a more intimate association of the members of the profession, nevertheless, while such continue to arise, let it be known that all complaints, if any, which may be unavoidable, or incapable of local adjustment, should be made in specific terms and directly to the councilor of the respective district wherein imperfections are claimed to exist, to the chairman of the council, or to the president or secretary of the State Medical Society, in order to expect or secure proper attention.

THE JOURNAL.

The always interesting and important topic of the JOURNAL and its growth and welfare is again brought to your attention, with assurances that there has been no diminution in the efforts continuously exerted in its behalf on the part of those who have had it in charge, or in the interest manifested by the membership of the society whose estate it is. As has already been stated, Dr. George N. Kreider of Springfield has been retained by the council as its editor, and Dr. F. R. Green of Chicago as its assistant editor and business manager. In that part of the report covering the topic made at the last annual meeting of the society, it had been shown that bright prospects were then in sight for its future publication under more favorable conditions for its satisfactory issue and desired improvement. From causes not within the control of the council such change in publication was delayed until near the close of the year 1905. The office of *The Journal of the American Medical Association* having finally reached a point at which it was willing to undertake such work, the chairman of its JOURNAL committee met, in October last, with and in the office of the secretary of such association in Chicago. After consultation, it was then mutually deemed advisable that, inasmuch as but two numbers of the state society's JOURNAL for the calendar and current volume remained to be issued, it was likely to be far more satisfactory to all concerned to have the publication under its new auspices begin with the new year and volume. Although this arrangement added to the already prolonged delay of improvements, much earlier contemplated, it is felt that in view of the

then existing circumstances and the final results obtained, it can but meet with your approval. Later the council, through its JOURNAL committee, entered into formal contract with *The Journal of the American Medical Association* for a future publication of the JOURNAL of this society, the wisdom of which must have already become apparent to most of you, who have observed its improved appearance and general makeup, although a few of the earlier issues were unavoidably delayed in consequence of the radical changes made in its location and publication.

The cost of publication estimates have been made upon a basis of 96 to 144 pages, and a monthly issue of 5,000 copies, with a provision for a stipulated price per 100 additional copies, whenever desired. With side stitch and cover, as now issued, such estimate varied with the number of pages to be printed, from \$270.00 for 96 pages, to \$380.00 for 144, and for a corresponding cost of publication of additional copies at from \$3.80 to \$4.50 per 100.

The latest completed volume of the JOURNAL, covering the last six months of 1905, contained about 548 pages of reading matter and 150 pages of advertisements, a total printed, approximately, of 700 pages. The cost for its printing simply was \$2,389.17, while the amount received from advertising was about \$2,700, thus leaving a balance over actual cost of printing of nearly \$300. This estimate, however, does not show the full cost of the publication, since it does not include the salaries or the office expenses of its editors. The number of outside subscribers has grown somewhat less, evidently indicating that more physicians are preferring to secure the JOURNAL through membership in component societies. In further proof of this fact, there is at the same time a gradual and corresponding increase of JOURNAL readers. Owing to more discrimination having been lately exercised than formerly as to the character of remunerative advertisements accepted, the revenue from this source in the near future is not likely to be immediately increased to any great extent, which fact should be borne in mind in levying a sufficient per capita tax for the new year. The amount of JOURNAL office expenses has not been afforded us for the period ending with Dec. 31, 1905, hence is not herein enumerated.

A matter of no little importance to the society and its JOURNAL is, we regret to state, the fact that secretaries of a large number of component societies fail to make proper report of the proceedings of their society meetings to the JOURNAL, notwithstanding that the editor has personally solicited each and all of them to promptly supply his office with copies. Fortunately a few have faithfully complied with such request and have thereby earned much credit for themselves and honor for their respective societies. Let all secretaries make studious effort to prevent such failure of duty in the future, and thus bring their individual organization to the front and add more local interest to the columns of the JOURNAL.

MEDICAL ORGANIZATION.

Organization of component medical societies in the few remaining unorganized counties, at our last report, has been progressing favorably, so much so that it can now be stated that the counties of Boone, Moultrie, Randolph, Hardin and Hamilton, five of the six counties only remaining without charters at that date, have since been organized and a charter issued to each. Franklin now remains the last and only county unorganized under the standard plan in the state.

This almost completes the duty of the council in this necessary preliminary work, so important as a step to further unison of effort in other directions. Henceforth, the even far more essential duty of endeavoring to enlist the interest of the medical profession of the state in these various local societies is one of paramount importance, alike to the usefulness and success of medical organization in general, and to the welfare and influence of such profession as a body. In order to aid in promoting a more general interest in such laudable enterprise, among the profession, your council, through the president of the State Medical Society, recently invited Dr. J. N. MacCormack, chairman of the committee on medical organization of the American Medical Association, to visit Illinois and hold a series of meetings throughout the state, during the month of April just passed. A schedule of appointments was duly prearranged for that purpose, cov-

ering every councilor district, so far as the time and two or three assignments in each would permit. Every available date in such month was soon assigned, and as the nature of the proposed meetings became better known and their purpose more fully understood, there arose an increasing demand for many more assignments than the council had dates to give, indicating a growing interest in the subject of organization to an extent that satisfied those in charge of the arrangements, that had circumstances permitted Dr. MacCormack to have remained longer in the state, every date of a second month's schedule would have been more promptly applied for than those of the first series.

Thirty-one appointments, extending from Carbondale in the south to Chicago in the northern part of the state, none of which were eventually un-met, were scheduled. At a majority of these places separate discourses were made to the profession and to the public, and thus not less than fifty assemblages were addressed by the speaker during a period of twenty-four of the twenty-five working days of the month named. That such meetings were the means of enlisting an increased professional interest and enthusiasm in medical organization, and were heartily appreciated by the attending public, needs no further confirmation at this time than to state that the commendations of the local press, wherever such meetings were held, with scarce an exception, were full and very complimentary. That these meetings will prove to have been of great benefit to the profession of the state and eventually a source of profit to its organization, there can scarcely be room for a doubt. That a repetition of a similar series of professional addresses in the near future, and at points not previously reached, would be of incalculable benefit to both the profession and the public, can not be denied. Although the expense of the fractional year herein to be accounted for may have been thereby materially increased, yet the remuneration of an enlarged professional interest alone must in the end show a balance on the side of profit.

FINANCES.

In conformity to the action of the House of Delegates in 1904, and for other reasons already given, the funds of the society are herein accounted for only for the fractional part of a year, viz., from the date of the last annual report in May to Dec. 31, 1905. They will be here exhibited as found in the summary of the duly audited report of the treasurer of the state society made to the council for the period named, and are as follows:

RECEIPTS.

May, 1905—Balance on hand.....	\$ 703.44
From Chicago Medical Society	367.50
From E. W. Weis, secretary.....	1,362.58
From advertisements	2,700.00
Total	\$5,133.52

DISBURSEMENTS.

Salaries	\$1,000.00
William Whitford	233.54
Bonds, secretary and treasurer	20.00
Expenses Council	463.23
Rebates	1.50
Discounts	35.79
Commissions	7.50
Printing	52.35
E. J. Brown, office expense	12.25
E. W. Weis, office expense	17.69
JOURNAL bills	2,389.17
Balance on hand	900.00
Total	\$5,133.52

It might be here stated that these funds have practically come from such sources as: (a), balance on hand at last report; (b), per capita tax; (c), JOURNAL advertisements; (d), a small surplus from the committee of arrangements of Rock Island; this last item consisting of \$31.68 in cash and an unpaid account of \$50, which was subsequently collected by the secretary, thus increasing the actual amount from such source to \$81.68; the result being an improvement over the preceding year, yet not up to the average of several others.

From the foregoing summary the fact may be deduced that the actual income for the period named has been \$4,430.08, while the expenditures for the same time have amounted to \$4,233.50, leaving a balance of income over expenses of \$197.06, to which, when the balance on hand at last report, viz., \$703.44, is added, the whole equals the sum of \$900.50, thus confirming that amount as being the correct balance on hand at Dec. 31, 1905.

Favorable and encouraging as these figures appear to have shown the finances of the society to have been four and one-half months since, it should not be forgotten that they may be somewhat misleading as to present conditions. Not until a report for the succeeding complete fiscal year can be had is there likely to be an absolute certainty of the actual outcome, or of the society's correct financial status, since a report covering only one portion of a year may show a larger proportion of a year's income, while another portion may include a larger share of the expenses paid; hence, an entire year's account is necessary in order to strike a correct balance. This fact points clearly to the wisdom and advisability of no present diminution of the per capita tax. Further confirmation of this statement lies in the additional fact that, in several respects, enlarged expenses have been incurred which are not included in the above disbursements, viz., the employment of an assistant editor, and in transferring of the JOURNAL from Springfield to Chicago, as well, likewise, in the unusual efforts recently made in the interest of medical organization throughout the state, for all of which no such recent bills could have been properly included, not having been contracted prior to Dec. 31, 1905.

Notwithstanding that the American Medical Association has supplied an efficient organizer at no immediate expense to the state society, nevertheless, the arranging of a schedule of more than thirty appointments, with suitable announcements to the public and the profession, and the carrying out of such itinerary throughout the several councilor districts of the state has very materially increased the expenses of the president, secretary and every one of the nine councilors, all of which was essential to securing the best possible results from the efforts thus made.

PROPERTY.

An invoice of the property of the society at this time has been omitted, as such was afforded in our last report but seven and a half months since. Little change that might seem to have called for another could possibly have occurred in either amount or character during so brief a period.

LEGISLATION.

The council has little to suggest at this time in the way of revision of the laws of the society. The Constitution and By-Laws, with an accompanying exhaustive appendix, as prepared by Dr. Frank Black, is now in type for the publication of 1,000 copies. Their issue, however, is being withheld until the close of the present annual meeting, in order that desired changes, if any, to be made, might be therein incorporated.

MISCELLANEOUS.

Blanks for component society secretaries' reports to their district councilors, and for the councilors to the council, have been prepared, as authorized at the last annual meeting, and it is believed will become more useful as they are more clearly understood and correspondingly more intelligently employed by the officers for whose convenience they have been arranged. Owing to the fact that a political organization had later appropriated practically the same dates for hold-

ing a party convention at Springfield, the committee of arrangements of the State Medical Society made a request that the annual meeting of 1906 be postponed for one week, which request was accordingly complied with by the president, the council concurring therein. Fortunately such convention was very soon afterward postponed, whereupon the former dates, on the desire of the same committee, were in like manner again promptly restored. Respectfully submitted,

W. O. ENSIGN, *Chairman Council.*

It was moved and seconded that the report be adopted. Carried.

Dr. Mammen moved that the House of Delegates express its appreciation of the changes and improvements that have been made in the JOURNAL, at the instance of the council, which was seconded and carried, after which the House took a recess until 12 m.

THIRD SESSION, MAY 16, 1906.

The House was called to order at 12 m. The secretary called the roll, a quorum being present. The minutes of the previous session were read and approved.

Dr. William A. Evans, Chicago, moved that the delegate from each county be and hereby is requested to nominate a member of his society for membership on the medico-legal committee, said nominee to be voted on by the House of Delegates at the election hour to-morrow. Provided, that the Cook County delegates shall nominate three. Provided, further, that where a society makes no nomination and no election of one of its members is secured, that said county be empowered to make *ad interim* nomination subject to the approval of the president; said members are temporarily associated with the committee; their term of service shall expire at the next annual meeting. And, further, that the members of the medico-legal committee chosen at the meeting to-morrow have the sanction of this House in perfecting an organization by ballot by mail.

Dr. Evans moved that these changes in the by-laws be adopted, which was duly seconded by Dr. Ensign, and carried.

Dr. Carl E. Black said, as a member of the legislative committee, he had several resolutions to offer which had been placed in his hands:

1. *Resolved*, That the committee on medical legislation be instructed and the members of the society be urged to work for the passage of the bill by the next General Assembly of Illinois, which shall provide that all bottles or packages containing drugs shall bear a statement on the label of the quantity or proportions of alcohol, narcotics, or other poisons which may be contained therein.

On motion this resolution was adopted.

2. *Resolved*, That the Illinois State Medical Society directs its committee on medical legislation, and urges its members to do what they can to secure the passage of the pure food bill now before the House of Representatives, except the amendment introduced into the bill by the house committee providing for the appointment of a commission of experts. It requests that this amendment, which would probably decrease the efficiency of the measure, be eliminated.

Resolved, further, That the committee on medical legislation and the members of the society be requested to oppose any amendment to this bill that would essentially change the provision of the bill as it came from the house committee, requiring the labeling of medical packages containing alcohol, narcotics, and other poisons.

Resolved, That these resolutions be sent to the Secretary of Agriculture, to the

members of the house committee on interstate commerce, and to the members of Congress from Illinois.

It was moved and seconded that these resolutions be adopted. Carried.

3. *Resolved*, That the Illinois State Medical Society directs its committee on medical legislation and urges its members to do what they can to secure the passage of the bill to increase the efficiency of the medical department of the army which is now before the House of Representatives.

Resolved, That a notice of this resolution be sent to the Secretary of War, to the Surgeon-General of the United States, to the members of the house committee on military affairs, and to the members of Congress from Illinois.

On motion, these resolutions were adopted.

4. WHEREAS, The American Medical Association, through its council of pharmacy and its *Journal*, edited by Geo. H. Simmons, has undertaken a campaign of education and of practical work against the nostrum evil in its various phases;

Resolved, That the Illinois State Medical Society fully endorses this great work and hereby urges its officers and members to co-operate in every way to further this cause.

On motion this preamble and resolution were adopted.

5. WHEREAS, This is largely a society of general practitioners who are of necessity interested in all branches of medicine and surgery; therefore, be it

Resolved, That the committee on scientific work be instructed for the next year's program to provide one day for the medical section at which papers on purely medical subjects be presented; one day for the surgical section, at which papers on purely surgical subjects be presented, and one day for a joint meeting, at which papers on borderland subjects and subjects of mutual interest to all are presented.

On motion this preamble and resolution were adopted.

Dr. Black presented the following amendment to the by-laws:

Chapter IV—Sections.—Sec. 1. For the transaction of scientific business, there shall be one or more sections, as may be determined from year to year by the committee on scientific work.

Sec. 2. The scientific work shall include the practice of medicine, medical specialties, materia medica, and therapeutics, etiology, pathology, hygiene, state medicine, medical jurisprudence, surgery, surgical specialties, and obstetrics.

Sec. 3. The general section, or each section, as the case may be, shall elect its own chairman and secretary.

Dr. Black moved the adoption of this change in the by-laws, which was duly seconded and carried.

Dr. C. S. Bacon, Chicago, again brought up the matter of increasing the representation of the third councilor district in the council of the state society.

After some discussion, Dr. Black moved that the matter be referred to a committee of three, consisting of Drs. J. W. Pettit, C. S. Bacon, and that these gentlemen be empowered to select a third member, to make a report later in the day.

This motion was seconded and carried, after which the House adjourned until 2:30 p. m.

The House re-assembled at 2:30 p. m., with Dr. M. S. Marcy in the chair. The secretary called the roll and there were more than a quorum present.

The first order was the report of the special committee appointed at the close of the last session of the House. Dr. Bacon said the committee had no report to make because of the position taken by one member of

the committee, who said he thought it was better to refer the matter back to the House as the committee had too limited a time to consider the proposition. After an explanation by Dr. Pettit that sufficient time was not allowed to consider thoroughly this important subject, Dr. Wilder moved that the subject be thrown open for general discussion for a period of fifteen minutes. This motion was seconded and carried. The president declared the subject open for a general discussion.

Dr. Ensign led the discussion, being followed by Drs. Bacon, Pettit, when Dr. Wilder moved that the amendment as proposed by Dr. Bacon be adopted. Seconded. After further discussion by Drs. Ensign, Evans, Curtiss, Will, Black, Pettit, White, Newell, Dr. Black moved as an amendment that a committee of three be appointed to take this matter under consideration and report at the next annual meeting. The amendment was seconded, after which there were cries of question, question. The chair put the question on the amendment, and as there was some doubt as to the result for or against, the call of the roll was demanded. The secretary then called the roll. There were 69 votes cast, 46 of which favored the amendment, while 23 were opposed to it. The chair then put the original motion as amended and declared it carried. Dr. Black then moved that a committee of three consisting of Drs. C. S. Bacon, chairman, J. W. Pettit and O. B. Will be appointed, which was seconded and carried. On motion the House then adjourned until 8 a. m. Thursday.

FOURTH SESSION, MAY 17, 1906.

The House of Delegates met at 8:15 a. m., and was called to order by the president. The secretary called the roll and there was more than a quorum present. The minutes of the previous session were read and approved.

Dr. Frank P. Norbury of Jacksonville, chairman of the committee on medical education, said the committee was not appointed until late in the spring, consequently it had not had an opportunity to formulate definite plans. Dr. W. O. Ensign moved that Dr. Norbury submit a report in writing, so that it may be published in the JOURNAL as a part of the proceedings. Seconded and carried.

Dr. J. W. Pettit offered the following resolution:

Resolved, That the Illinois State Medical Society joins with the Chicago Medical Society in extending a cordial invitation to the American Medical Association to meet in Chicago in 1907.

It was moved and seconded that this resolution be adopted. Carried.

Dr. George W. Webster of Chicago said that Dr. John H. Hollister of Chicago was now 82 years of age, and that next year he will have been a member of the society for fifty years. He had just escaped with his life from the earthquake at San Francisco. He thought it would be an appropriate thing for the House of Delegates to take some action with reference to honoring Dr. Hollister next year.

Dr. W. O. Ensign moved that a committee be appointed to carry out the suggestions of Dr. Webster. This motion was seconded by Dr. Pettit, who asked that Dr. Webster be made chairman of the committee. Carried. Dr. Webster asked whether the committee should get up a bronze

tablet or a memorial, and what authority should be given to the committee? Dr. M. S. Marcy of Peoria moved that the committee be given full power to act. Seconded. Dr. Carl E. Black said that the council was the only body authorized to vote money for any purpose. He thought, however, that this committee could co-operate with the council, or the council co-operate with the committee, so that money could be voted for this purpose. Dr. Marcy accepted this suggestion.

Dr. C. W. Lillie of East St. Louis said it appeared to him that it would be far more appropriate to arrange a testimonial banquet for Dr. Hollister, so that each individual member could contribute to it, and then the society would not be taxed with any expenditure for this purpose. It would be a personal testimonial from each member present. Dr. Webster said his own idea of the matter was that a testimonial banquet could be arranged at which Dr. Hollister could be presented with some slight token indicating to him that we have remembered his fiftieth anniversary in the society. This testimonial need not be expensive, but one to which every member would be glad to contribute.

The motion of Dr. Marcy was then put and carried.

Dr. Wm. M. Harsha of Chicago tendered his resignation as member of the House of Delegates of the American Medical Association. On motion, the resignation was accepted.

ELECTION OF OFFICERS.

At this juncture the election of officers was proceeded with. The president appointed as tellers Drs. C. W. Lillie and Carl E. Black.

The balloting resulted in the election of the following officers:

President—Dr. J. F. Percy, of Galesburg.

First Vice-President—Dr. L. H. A. Nickerson, of Quincy

Second Vice-President—Dr. James H. Stowell, of Chicago.

Secretary—Dr. E. W. Weis, of Ottawa (re-elected).

Treasurer—Dr. E. J. Brown, of Decatur (re-elected).

When it came to the election of councilors Dr. W. O. Ensign tendered his resignation as councilor of the Second District.

Dr. Arthur Dean Bevan moved that the resignation be accepted with regrets. Seconded.

Dr. F. R. Green, of Chicago, moved to amend that the cordial and sincere thanks of the society be tendered to Dr. Ensign for his long and valued services. Seconded.

Dr. Bevan accepted the amendment and the original motion as made was put and carried.

Dr. C. C. Hunt, of Dixon, was nominated and elected councilor of the Second District.

Third District—Dr. M. L. Harris, of Chicago.

Sixth District—Dr. Carl E. Black, of Jacksonville.

Ninth District—Dr. H. C. Mitchell, of Carbondale.

Delegates to the American Medical Association—Dr. George H. Webster, of Chicago; Dr. J. L. Wiggins, of East St. Louis; Dr. O. B. Will, of Peoria; Dr. Charles L. Mix, of Chicago

Alternates—Dr. T. N. Rafferty, of Robinson; Dr. L. C. Taylor, of

Springfield; Dr. J. C. Foley, of Waukegan; Dr. J. W. Hairgrove, of Jacksonville; Dr. J. T. Whitley, of Peterboro; Dr. John C. Cook, of Chicago; Dr. William Barnes, of Decatur; Dr. T. J. Watkins, of Chicago.

Dr. W. O. Ensign said it was essential that a per capita tax be provided for. Accordingly he moved that a per capita tax of \$2.50 be levied on each member for the coming year (\$1.50 for membership and \$1.00 for medical defense).

This motion was seconded and carried unanimously.

Dr. Charles S. Bacon, of Chicago, announced that Cook County had selected for its representative on the committee on medical defense Drs. W. A. Evans, H. N. Moyer and C. T. Pence, of Chicago.

Dr. George W. Webster, of Chicago, then moved that the secretary correspond with the component county medical societies, asking each to appoint on the committee on medical defense one person instead of electing them now, in order to facilitate business. Carried.

Committee on Medical Legislation—Dr. L. C. Taylor, of Springfield, chairman; Dr. M. S. Marey, of Peoria; Dr. J. B. Fowler, of Chicago.

Committee on Public Policy—Dr. Frank Billings, of Chicago, chairman; Dr. Carl E. Black, of Jacksonville; Dr. J. W. Pettit, of Ottawa; the president and secretary *ex-officio*.

Dr. Charles L. Mix was elected a member of the committee on medical education, to serve for three years.

Dr. J. E. Allaben extended a cordial invitation to the society to hold its next annual meeting in Rockford, and on motion of Dr. George W. Webster the invitation was accepted.

Dr. George W. Webster moved that the thanks of the House of Delegates be extended to the members of the profession of the city of Springfield, through its entertainment committee, for the band concert and vaudeville entertainment rendered by the Gaiety Entertainment Company; to the citizens of Springfield for their courtesy and kindness; to Prof. V. E. Henshie for his organ recital; to Miss Bessie O'Brien for vocal solos, and Governor and Mrs. Deneen for their hospitality, reception and uniform courtesy, and that a copy of these resolutions be sent by the secretary to the local entertainment committee and to Governor Deneen.

These resolutions were seconded and unanimously carried.

There being no further business to come before the meeting, on motion the House of Delegates then adjourned to meet at Rockford the third Tuesday in May, 1907.

EDMUND W. WEIS, *Secretary*.

MINUTES OF SECTION ONE.

Chairman—DR. JAMES H. STOWELL, Chicago.

Secretary—DR. H. H. WHITTEN, Peoria.

FIRST SESSION.

The society was called to order by the chairman, Dr. Stowell, at 9:30 a. m., May 15.

Duties and Obligations Relating to Tuberculosis, by Dr. C. W. Lillie, of East St. Louis; discussed by Drs. Pettit, Wheaton, Gray, G. W. Webster, Adams, and the discussion closed by the essayist.

Etiology and Diagnosis of Tubercular Spondylitis in Infancy and Childhood, by Dr. J. H. Hess, of Chicago; discussed by Drs. G. W. Webster, Lillie, W. J. Butler, Grinker, Newcomb, and in closing by the essayist.

The Treatment of Congenital Syphilis in the Infant, by Dr. I. A. Abt, of Chicago; discussed by Drs. W. J. Butler, Roach, Cotton, Grinker, and in closing by Dr. Abt.

Adjourned.

SECOND SESSION.

The society reassembled at 2 p. m., with Dr. Stowell in the chair.

Hysteria in Children, by Dr. d'Orsa Hecht, of Chicago; discussed by Drs. Grinker, Norbury, W. J. Butler, Cotton, Abt, Cook, and in closing by Dr. Hecht.

Intestinal Disorders of Children, Accompanied with Diarrhea, by Dr. J. C. Cook, of Chicago; discussed by Drs. Bawden and Gehrman.

Some Practical Points on Infant-Feeding, by Dr. A. C. Cotton, of Chicago; —discussed by Dr. J. Hess, I. A. Abt, Bawden, Munson, Gehrman, Babcock, and in closing by Dr. Cotton.

Manifestations of Rheumatic Infection in Children, by Dr. C. Martin Wood, of Decatur; discussed by Drs. Munson, Fletcher, E. J. Brown, W. J. Butler, Grinker, and in closing by Dr. Wood.

The Attitude of the Physician Toward the Nostrum Evil, by Dr. Charles Spencer Williamson, of Chicago; discussed by Drs. Will, Percy, Bawden, Nickerson, and in closing by Dr. Williamson.

Disease in the Aged, by Dr. W. H. Curtis, of Wilmington; discussed by Dr. Hollister.

Methuselah's Letter to His Son, by Dr. H. S. Metcalf, of Mount Carroll.

Adolescence, by Dr. F. P. Norbury, of Jacksonville.

The Macroscopic Agglutination of the Typhoid Bacilli as a Diagnostic Test for the General Practitioner, by Dr. A. M. Stober, of Chicago; discussed by Drs. Larned, Bawden and the author.

Adjourned.

THIRD SESSION.

The section reconvened at 9:15 a. m., May 16, with Dr. Stowell in the chair.

Lordosis, with Report of a Case, by Dr. M. S. Marey, of Peoria; discussed by Drs. Mix, J. H. Bacon, and in closing by Dr. Marey.

Newer Ideas on the Treatment of Obesity, by Dr. A. C. Croftan, of Chicago; discussed by Drs. A. R. Elliott, Marey, Hollister, R. C. Webster, Bawden, Mettler, Abbott, Fairbrother, Ferguson, and in closing by Dr. Croftan.

Some Problems of Interest Which Concern the Surgeon, by Dr. J. F. Percy, of Galesburg; discussed by Drs. Davis, Bevan, E. J. Brown, L. C. Taylor, Bawden, Roark, Larned, Mix, Brown, and in closing by the author.

Significance of Hydrochloric Acid Variation in the Stomach, by Dr. E. J. Brown, of Decatur.

Adjourned.

FOURTH SESSION.

The section reassembled at 2:15 p. m. with Dr. Stowell in the chair.

Cytodiagnosis of Pleuritic and Pericardial Fluids of All Sorts, by Dr. A. A. Goldsmith, of Chicago.

Empyema: Pathogenesis, Pathologic Anatomy, Symptoms, Diagnosis and Treatment, by Dr. L. C. Taylor, of Springfield.

General Symptomatology and Physical Signs of Pleuritis, Mechanical Effects of Fluid and Special Symptoms, by Dr. C. S. Williamson, of Chicago.

Pericarditis: General Symptoms and Physical Signs; Mechanical Effects of Fluid Distention of the Sac, by Dr. C. A. Elliott, of Chicago.

Treatment of Pleurisy and Pericarditis and of Their Various Forms, by Dr. N. S. Davis, of Chicago.

This symposium on the serous inflammations of the thorax was discussed by Drs. Ingals and A. R. Elliott.

The following papers were read in the symposium on the serous inflammations of the abdomen:

Pathogenesis, Etiology and Pathology of Peritonitis, by Dr. W. A. Evans, of Chicago.

Pathogenesis of Ascites, by Dr. Theodore Tieken, of Chicago.

General Symptomatology and Physical Signs of Peritonitis, by Dr. C. L. Mix, of Chicago.

Differential Forms and Diagnosis of Peritonitis and Its Various Forms, by Dr. E. E. Kerr, of Chicago.

Discussed by Drs. Bevan, Halstead, Evans and Barrett.

Adjourned.

FIFTH SESSION.

The section reassembled at 10 a. m., May 17, with Dr. Stowell in the chair.

Facts and Fallacies Concerning Interstate Reciprocity in Medical Licenses, by Dr. J. A. Egan, of Springfield; discussed by Drs. Bevan, G. W. Webster, Hollister, Lillie, and in closing by Dr. Egan.

The Opium Habit and Its Treatment, by Dr. George F. Butler, of Chicago.

At this juncture the following were elected officers of the section for the ensuing year: Chairman, Dr. C. W. Lillie, of East St. Louis; secretary, Dr. Ralph W. Webster, of Chicago.

The Value of Pain and of the Urine in the Lay Diagnosis of Kidney Disease, by Dr. S. W. Hopkins, of Walnut; discussed by Dr. R. W. Webster.

Diabetes Not a Disease, *per se*, but a Condition, Accompaniment or Sequelæ of Several or Numerous Different Diseases, by Dr. S. A. Oren, of Lewistown.

Modern Conceptions of the Metabolism of the Diabetic, by Dr. R. W. Webster, of Chicago.

The Progress of Serum Therapy During the Last Year, by Dr. E. R. Larned, of Chicago.

Medial Side of Ophthalmoscopy, by Dr. J. F. Burkholder, of Chicago.

Defects of Vision and Hearing in the Public Schools; Visual and Aural Defects and Their Relation to Education, by Dr. J. W. Smith, of Bloomington.

Reflex Nervous Symptoms of School Children, Due to Impaired Vision and Hearing, by Dr. F. P. Norbury, of Jacksonville.

Subjective Symptoms of Eyestrain and Their Effects in the Pupil's Work, by Dr. A. L. Adams, of Jacksonville.

The Importance of Good Illumination and the Proper Method of Lighting, by Dr. J. A. Egan, of Springfield.

The Rheumatic Diseases, by Dr. E. Baehrach, of Decatur.

Arthritis Deformans, by Dr. E. W. Ryerson, of Chicago.

Pneumonia, by Dr. R. H. Bradley, of Marshall.

Exophthalmic Goiter, by Dr. S. M. Miller, of Peoria.

What the Health Department of Chicago Has Done and Is Doing to Safeguard the Public Health, by Dr. Charles J. Whalen, of Chicago.

Dr. F. P. Norbury moved that the resolutions presented by Dr. J. W. Smith be referred to a committee of the section, to be formulated properly and presented to the House of Delegates for action at the next meeting of the society. Carried.

The chair appointed as this committee Drs. J. W. Smith, W. O. Nance and

Adjourned.

MINUTES OF SECTION TWO.

Chairman—DR. R. J. CHRISTIE, JR., Quiney.

Secretary—DR. S. C. PLUMMER, Chicago.

FIRST SESSION.

The section was called to order by the chairman at 9:30 a. m., May 15. On motion the address of Dr. D. W. Graham, of Section Two, was postponed until Wednesday at 1:30 p. m., when it could be given before both sections.

Papers were read as follows:

Dr. F. B. Lucas, of Peoria, read a paper entitled Flatfoot and Symptomatic Arches; discussed by Drs. Ochsner, Allaben, Nesbitt, and in closing by the essayist.

Dr. Charles D. Center, of Quiney, read a paper on The Brain a Good Field for Surgery, as Shown by Its Disregard for Traumatism; discussed by Drs. Beck, Grinstead, and in closing by the essayist.

Dr. Frederiek A. Leusman, of Chicago, followed with a paper entitled Notes on Renal Diagnosis, with Reference to Nephrotomy, Nephrectomy, Nephrorrhaphy and Plastic Pelvo-Ureteral Surgery; discussed by Drs. Murphy, Harris, Ochsner, and in closing by the author.

Dr. H. I. McNeill, of Newman, read a paper on The Diagnosis of

Abortion, which was discussed by Drs. Bacon, Barrett, Sauer, and in closing by the essayist.

Adjourned.

SECOND SESSION.

The section was called to order at 2 p. m. by the chairman.

In a symposium on The Surgery of the Prostate Gland papers were read as follows:

1. How Can We Secure the Co-Operation of the General Practitioner in the Surgical Treatment of the Enlarged Prostate? by Dr Carl E. Black, of Jacksonville.

2. The Present Status of the Bottini Treatment of Enlarged Prostate, by Dr. F. Kreissl, of Chicago.

3. Contribution to the Surgery of the Prostate, by Dr. M. R. Barker, of Chicago.

4. Indications for, Limitations and Clinical Results of Prostatectomy, by Dr. John B. Murphy, of Chicago.

5. Perineal Prostatectomy, the Operation of Choice, by Dr. Alexander Hugh Ferguson, of Chicago.

The symposium was discussed by Drs. Fuller, Ochsner, Beck, Leusman, and in closing by Drs. Black, Barker and Ferguson.

Dr. H. N. Rafferty, of Robinson, read a paper entitled Problems in Appendicitis, which was discussed by Drs. Drucek, Allaben, Maley, Barrett, Van Hoosen, Brown, Green, and in closing by the essayist.

Dr. Carl Beck of Chicago, read a paper entitled Angioma and Its Surgical Treatment. This paper was discussed by Drs. Halstead, Drucek, Mammen, Percy, and in closing by the author.

Adjourned.

THIRD SESSION.

The section was called to order at 9 a. m., May 16, by the chairman.

Dr. Charles J. Drucek, of Chicago, read a paper an Perirectal Abscess, which was discussed by Drs. Fairbrother, Eisendrath, Stremmel, Bevan, Ochsner, Beck, and in closing by the essayist.

Dr. Franklin H. Martin, of Chicago, read a paper entitled Shortening the Round Ligaments at the Internal Ring for Persistent Retroversion of the Uterus; discussed by Drs. Barrett, Watkins, Lewis, Ochsner, Beck, O'Byrne, Fuller, Keyes, and in closing by the author.

Dr. J. J. Roach of Chicago, followed with a paper entitled The Surgical Treatment of Mother and Newborn Babe by the General Practitioner; discussed by Drs. Bowles, Paddock, Wright, White, Wheaton, Allaben, Keyes, and the discussion closed by the essayist.

Dr. George L. Eyster, of Rock Island, read a paper on Some of the Complications and Emergencies Met With in the Surgical Treatment of Ovarian Cystoma; discussed by Drs. Watkins, Barrett, and in closing by the author.

Dr. Denslow Lewis, of Chicago, followed with a paper on The Need of Publicity in Venereal Prophylaxis; discussed by Drs. Leusman, Fairbrother, Lespinasse, Wheaton, Barrett, and in closing by the essayist.

Adjourned.

FOURTH SESSION.

The section was called to order at 2 p. m.

In the symposium on Fractures papers were read as follows:

1. Treatment of Compound Fractures, by Dr. E. H. Ochsner, of Chicago.
2. The Use of Extensive Frames in the Treatment of Fractures of the Thigh and Leg by Ambulatory Casts, by Dr. Frederick Mueller, of Chicago.
3. The Operative Treatment in Fractures Presenting Obstacles to Reduction, by Dr. William Fuller, of Chicago.
4. The Roentgen Ray in Fractures, by Dr. W. R. Cubbins, of Chicago.
5. Pathologic Fractures Resulting from Metastatic Carcinoma, by Dr. A. E. Halstead, of Chicago.

The symposium was discussed by Drs. Bevan, Eisendrath, Parrish, Beck, Fuller, and the discussion closed by Dr. Ochsner.

Dr. G. Frank Lydston, of Chicago, read a paper entitled Vasectomy With or Without Subsequent Anastomosis, With Special Reference to the Treatment of Certain Inflammatory and Neuropathic Disturbances of the Male Sexual Apparatus; discussed by Drs. Lespinasse, Ochsner, and in closing by the essayist.

Dr. D. N. Eisendrath, of Chicago, read a paper entitled The Operative Treatment of Superficial Carcinomata; discussed by Dr. Plummer, a member, and in closing by Dr. Eisendrath.

Dr. Nickerson moved that a committee be appointed to nominate officers for the section. Carried.

The chairman appointed Dr. Charles S. Bacon, of Chicago; Dr. J. F. Percy, of Galesburg, and Dr. L. H. A. Nickerson, of Quincy.

Dr. W. K. Newcomb, of Champaign, read a paper on Sarcoma in Childhood, With the Report of a Case and Exhibition of Specimen; discussed by Drs. Lewis, Eisendrath, and the discussion closed by the essayist.

Adjourned.

FIFTH SESSION.

The section was called to order at 9 a. m., May 17, by the chairman.

Dr. W. O. Nance, of Chicago, read a paper entitled Treatment of Blennorrhoea of the Lacrimal Sac, With Special Reference to Sac Extirpation.

Dr. A. E. Prince, of Springfield, read a paper entitled The Operative Treatment of Chronic Discharges of the Ear.

In the symposium on Carcinoma papers were read as follows:

1. Popular Agitation for the Early Operative Treatment in Carcinoma, by Dr. George N. Kreider, of Springfield.
2. The Operative Treatment of Superficial Carcinomata, by Dr. D. N. Eisendrath, of Chicago.

Discussed by Drs. Percy, Newcomb, Graham, Prince, Ochsner, Allaben, Christie, Leusman, and in closing by Dr. Kreider.

Dr. Leusman moved that a committee be appointed for the purpose of suggesting means to inform the public of the danger of cancer and to

consider the whole subject and that Dr. Kreider be made chairman of the committee. Seconded.

Dr. Ochsner moved as a substitute that the whole matter be submitted to the general society for consideration at the next meeting.

The substitute was seconded and carried.

The chairman at this juncture expressed his thanks to the members for their uniform kindness and assistance rendered him in the work of the section.

E. H. Ochsner, Chicago, chairman; H. W. Chapman, secretary, were elected officers of Section One for ensuing year.

Dr. J. L. Wiggins, of East St. Louis, read a paper on The Logic of Abdominal Pain, which was discussed by Drs. Gillmore, Ochsner, Simpson, Allaben, Leusman, McKee, and in closing by the essayist, after which the section adjourned *sine die*.

ANNUAL MEETING OF THE CHICAGO MEDICAL SOCIETY.

The annual election of the Chicago Medical Society occurred on Wednesday, June 20. Nearly 700 votes were cast, the largest poll in the history of the society. The following officers were elected:

President, George W. Webster; Secretary, Robert T. Gillmore; Councilors (for three years), William A. Evans, C. S. Bacon, Frank Billings, L. L. McArthur and Fernand Henrotin.

The two measures submitted to the general society on a referendum, one regarding the regulation of a contract practice and the other instructing the Council to establish a business bureau, each obtained a majority of the votes cast, but failed of adoption. Less than half the total membership voted.

At the annual meeting, held in the evening, reports for the year were made by the officers and chairmen of the various committees. The secretary's report showed a gain of 250 new members for the year. The report of the medico-legal committee showed that since the organization of the committee not a case had been decided or a judgment rendered against a member of the society for malpractice. The membership now numbers 1,928, of which 66 are life members, 31 emeritus, 5 honorary, and 113 non-resident.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

GENERAL OFFICERS 1906-07

PRESIDENT	- - - -	JAMES F. PERCY, GALESBURG
FIRST VICE-PRESIDENT	-	L. H. A. NICKERSON, QUINCY
SECOND VICE-PRESIDENT		JAMES H. STOWELL, CHICAGO
TREASURER	- - - -	EVERETT J. BROWN, DECATUR
SECRETARY	- - - -	EDMUND W. WEIS, OTTAWA
		(Ex-officio Clerk of the Council.)
EDITOR	- - - -	GEORGE N. KREIDER, SPRINGFIELD
		522 Capitol Avenue.
ASSISTANT EDITOR	- -	FREDERICK R. GREEN, CHICAGO
		5627 Prairie Avenue.

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J. WHITEFIELD SMITH, BLOOMINGTON.	

JULY, 1906.

THE BOSTON SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

The fifty-seventh annual session of the American Medical Association, held at Boston, June 5 to 8, set a new standard for the annual meetings of this body. Not only was the registration—nearly 5,000—larger than that of any previous session, but in scientific interest, enthusiasm, enjoyment and results accomplished, the session of 1906 surpassed any meeting in the history of the Association. Passing at one bound from Portland, the comparatively new and bustling young city of the Pacific, to venerable Boston, full of historic associations, for centuries the center of Atlantic progress and civilization, the Association, as President McMurtry happily said in his opening address to the House of Delegates, well typified its broad scope and truly national character.

Although the attendance broke all previous records, yet so admirable were the arrangements of the local committee that all present were cared for, without discomfort to any one. In fact, the remark was frequently made by Illinois members present that, if the Association elected to meet next in our State, Chicago would have to outdo herself to come up to the mark set by Boston. But the committee made a very popular choice, selecting Atlantic City for 1907. It is anticipated, however, that the session of 1908 will be held in Chicago.

Illinois had just reason to feel proud of the representation, both in the House of Delegates and in the Sections. During the four days of the session there were 237 members from Illinois registered. Only two other states besides Massachusetts had a larger number present. These were New York and Pennsylvania, both eastern states, much nearer the meeting place. In the House of Delegates and in practically all of the Sections, our members took an active and creditable part.

It is impossible to even outline the work of either the House of Delegates or any of the Sections. So greatly has the range and scope of the Association widened that, to-day, any one of the Sections hears more papers and does more work than the entire Association did in former years. It was evident from the first that the organized profession of the country was unified, determined and working to definite and clearly defined ends to an extent never before possible. A year of the most bitter, virulent and crafty attack upon the profession of the country by corporate interests grown enormously wealthy through the exploitation of the medical profession and the public, a campaign of innuendo, misrepresentation and at times even of intimidation, left the Association more firmly united, more determined and, what is still more significant, more enlightened than it was a year ago. A more representative body of men than the Boston House of Delegates would be difficult to find. Although gathered from all parts of the country, it was evident that the delegates and members of Sections had made up their minds definitely and finally on the questions at issue and were only awaiting an opportunity to place themselves on record. On such questions as the inspection of and regulation of traffic in drugs, "patent medicines" and food stuffs, the reduction of insurance fees, improvement of sanitary conditions, elevation of the standard of medical education and of the personnel of the medical profession and the adoption of reciprocity, as well as in its endorsement of the policy of the Association during the past year, the House and the Sections spoke with no uncertain voice.

Perhaps the most forcible impression of the session was that of the enormous value of these gatherings. No man who is a chronic attender at meetings of the American Medical Association ever neglects his state association meeting. No one who has met and listened to the best men from all parts of the land can help being of more value to his county and state society, to his friends, his patients and himself. It is to be hoped that by 1908 the members of the Illinois State Medical Society may entertain the American Medical Association and so receive the double blessing and benefit that comes from hospitality extended and inspiration received.

THE PURPOSE OF ORGANIZATION.

An organ is a part or structure capable of performing some special act which is essential to the life or well-being of the whole; an organization is an orderly, systematic arrangement whereby some end is accomplished. The organ itself, the organization itself, the method and the means, are always subordinate and of less consequence than the result achieved. This is a most important distinction and can not be made too often. We are too prone to mistake the visible for the attainable, the means for the end, the method for the result. The only value in organization is that which is obtained by organization that could not be gotten otherwise. The organization is always subordinate to and secondary to the objects and purposes of organization.

We can not, then, too often ask ourselves the question, "What is the object of medical organization?" Is it simply to complete our society roll, in a purely perfunctory way, so that the secretary can report that "every physician in the county is a member?" Such a society, if it stops

here, has done much, but it has stopped when the work was only begun. The only reason why it is desirable that every reputable physician be a member of his county society is that there may be unanimity and concord of action and thought in prosecuting the further aims of the society.

Is the society organized in order that its members may monopolize the field and prevent the entrance of other equally competent and deserving men as competitors? Heaven forbid. That is but another form of the labor union and the closed shop. Better no organization at all than an organization for selfish aggrandizement.

Is its object the enactment of laws conferring special rights and privileges upon the profession or limiting its membership for the benefit of those already admitted? No; that is special class legislation, is thoroughly un-American and undemocratic and is abhorrent to every fair-minded citizen.

Does the organization exist for the purpose of increasing the work or the business of the profession? Such an object, perfectly legitimate in an association of business men, could never appeal to an honorable member of the most unselfish of all professions. The medical history of the last century shows a constant struggle, on the part of the great bulk of our profession, to reduce to the smallest possible amount the ravages of disease and pestilence. No class of men were more active than the physicians in procuring pure water for Chicago, in spite of the fact that they knew it would make typhoid fever an extinct disease in that city. It is safe to say that the Drainage Canal has reduced the net income of the medical profession of Chicago by hundreds of thousands of dollars. Has any physician sued the Drainage Commission, alleging injury to his business or loss of income? Misinformed enthusiasts and ignorant fanatics are fond of attributing the profession's approval of vaccination to the supposed revenue derived therefrom. Yet we know from history that, prior to Jenner's great discovery, smallpox periodically devastated Europe and of those grown to adult life that one in every three bore the marks of the ravages of the dread disease. To the eternal credit of the medical profession be it said that its members have always put their duty to the public far ahead of their own material interests. What, then, is the purpose of organization? It can be told in a word—education, first, of its own members and, second, of the public. No matter what direction the activities of a medical society may take, it is this which differentiates it from other organizations of an apparently similar nature, which distinguishes it from labor union or political machine, and which determines how nearly any given society is accomplishing the purpose for which it was established. Its meetings, its papers, its clinical demonstrations, its discussions, are for the education of its members. Only the ignorant are complacent, only the stagnant are satisfied. The greatest and the wisest most freely admit their need of enlightenment. For the public, naturally most interested in the practical application of facts which touch their daily life, there must be education along the lines of general hygiene and prophylaxis. Of such a nature are the crusades for pure food, pure drugs and pure beverages, against harmful occupations and in favor of all safeguards in dangerous lines of work. Under this head, too, comes agitation for better and more rigid practice laws, which shall protect the public against imposters and ignoramuses. In fact, it would be difficult to name a proper and commendable line of work in which any medical society is engaged that does not rest on this fundamental principle of education. This is the field of and the mission of medical organization, and by this standard can the value of any medical society be estimated.

THE STATE CHARITABLE INSTITUTION QUESTION.

We were not at all surprised when the charitable institutions of Illinois showed a condition of affairs little creditable to the third state in the Union. We have for several years been calling attention in a mild way to the effect of political control on these important hospitals and have prophesied that a day would come when there would be a volcano of public disapproval. Up to the time of this writing, the institution particularly in the lime-light has been the Kankakee Asylum, in which it has been shown that there have been grave abuses. It has also been shown that the superintendent and his numerically inadequate medical staff have been greatly hampered, by being overworked and underpaid. Immense responsibility appears to have been imposed upon them, without any adequate facilities for meeting them. All of this is the legitimate outcome of political control, which is always grasping and heartless in its management of the unfortunate. We sympathize, as much as possible, with our colleagues who have been compelled to work in this atmosphere. This sympathy is modified by the thought that they should not so long have consented to be placed in this distressing position.

We applaud the work of the re-organized State Board of Public Charities and the governor and hope that no hesitation will be revealed in their decision to place all the state institutions and boards on the highest possible scientific plane.

THE PURE FOOD QUESTION AND THE CHICAGO PACKERS.

In October, 1905, we editorially called attention to the grave charges made by the commissioner of health, of Chicago, against the inspectors of the United States Government, as regards the inspection of the food products of the National Stock Yards. We then called upon President Roosevelt to bring his big stick along and attack the evil, which was more important than the Panama canal. We rejoice, therefore, that events have so turned out that an active campaign is being waged against abuses in the stock yards and the prospects seem to be good for a reform which will be far-reaching in its effects. Public attention, we believe, was first called to the stock yards by that valuable and reliable medical journal, *The London Lancet*. Anyone who has visited the public abattoirs in Berlin or any other great European city and compared their cleanliness with that which has heretofore existed in the Chicago stock yards, must acknowledge the justice of this present agitation. The cleansing of the stock yards is not the only benefit to be derived from recent developments. It appears now that the pure food bill will be dragged from the pockets of venal congressional committeemen and placed on its way to passage. There is every prospect that if it ever gets on the floor of the House, it will be passed and that the year 1906 will long be known for legislation favorably affecting the life and health of the people.

COUNTY AND DISTRICT SOCIETIES

CARROLL COUNTY.

The spring meeting of the Carroll County Medical Society met May 8 in Mount Carroll. There were present Drs. Johnson, Hunter and Lyness, of Savannah; Dr. Harrison, of Chadwick; Dr. McPherson, of Hazelhurst; Dr. Hendricks, of Lanark; Dr. Overholser, of Milledgeville; Dr. Wright, of Fair Haven; Drs. Greeley, Rinedollar, Wood, Rice, Colehour, Powers, Mershon, Clay and Metcalf, of Mount Carroll, and J. H. Stealy, of Freeport.

The society was organized in 1900. In 1902 an invitation was extended to all reputable physicians of the county who would "agree not to practice sectarian medicine." At the last meeting every doctor in good standing had joined the organization.

The program consisted of papers by Drs. Wales, Rinedollar, Metcalf and the district councilor, Dr. J. H. Stealy, of Freeport. Dr. Stealy's paper on Appendicitis with Adhesions and Differential Diagnosis from Other Abdominal Inflammatory Troubles awakened a good deal of interest and discussion.

Resolutions were adopted protesting against the life insurance companies' reduction of examination fees; approving the proposed plan of the state society to organize a physicians' protective association; expressing the appreciation of the society of the attitude of *Collier's Weekly* and the *Ladies' Home Journal* toward "patent" and proprietary medicines.

Dr. G. E. Mershon was chosen delegate to the meeting at Springfield. The visiting brethren were guests of the Mount Carroll doctors at dinner.

H. S. METCALF, *Secretary*.

CLAY COUNTY.

The Clay County Medical Society held its regular quarterly meeting at Louisville, Tuesday, June 12, 1906, 2 p. m. The following members were present: Drs. Falley, Fairchild, Cruse, Stealy, Gibson and Duncan. In the absence of the president Dr. W. F. Fairchild was elected president pro tem. A letter from a committee appointed by the Children's Hospital Society of Chicago for the purpose of agitating the question of establishing a state colony for epileptics was read. On motion the chair appointed the following committee: Drs. R. L. Falley, N. W. Bowman, C. V. Cruse.

Dr. R. L. Falley read a very interesting paper on A Typical Case of Cerebrospinal Meningitis, which was discussed by all members present. The society adopted resolutions protesting against the reduction of fees for examination of applicants for life insurance. The death of Dr. C. E. McKnelly, of Ingraham, was reported to the society and the president appointed the following committee to draft resolutions of respect: Drs. Burgett, Stealy, Gibson and Falley.

The following officers were elected for the ensuing year: President, W. F. Fairchild, Flora; first vice-president, C. V. Cruse, Iola; second vice-president, G. W. Stealy, Louisville; secretary, C. E. Duncan, Flora; treasurer, N. W. Bosman, Flora.

The next meeting will be held at Louisville, Sept. 11, 1906. All members present expressed themselves as being heartily in accord with the establishment of the system of medical defense.

C. E. DUNCAN, *Secretary*.

CLINTON COUNTY.

The annual meeting of the Clinton County Medical Society was held at Club Lake Park, Carlyle, May 8, 1906. The meeting proved to be one of the pleasantest and largest ever held in the history of the society. The following officers and members responded to roll call: T. Gaffner, president; J. J. Moroney, vice-president; C. H. McMahan, secretary; T. E. Alsop, treasurer; Drs. A. W. Carter, J. W. DuComb, J. G. Vogt, F. G. Edwards, J. R. Tweedy, J. A. Bauer, W. P. Gordon, A. G. Fuller, B. J. Mcirinke, S. H. Wilcox, J. Q. Roane and F. Fischer. Visitors present: Dr. E. E. Fyke, councilor for the Seventh District, and Dr. T. F. Gerould, both of Centralia; Dr. Biles, of Carlyle; Dr. G. H. Vernon, of Carlyle; Dr. Wilcox, of Shattuc; C. W. Dean, D.D.S., of Carlyle.

President Gaffner called the meeting to order at 10 a.m., after which the minutes of the last meeting were read and approved. The following physicians were admitted to full membership upon consideration of their payment in full of their annual dues and the membership fee: G. A. Gissey, New Baden; F. Fischer, Bartleso; H. G. Huwacheck, New Memphis; A. L. Fischer, Huffman; W. G. Bechtold, Breese; G. H. Poos, Summerfield, St. Clair County; M. P. DuComb, Keysport; J. R. Tweedy, Huey; J. W. DuComb, Beckemeyer. Reports of the secretary and treasurer for the year 1905-1906 were read and accepted. The annual election of officers was then held, the result being as follows: T. E. Alsop, Carlyle, president; J. G. Vogt, Trenton, vice-president; C. H. McMahan, Carlyle, secretary; A. G. Fuller, Breese, treasurer. Dr. S. H. Wilcox was selected as delegate to the state convention, with Dr. J. J. Moroney as alternate.

The lecture of Dr. McCormack, of the American Medical Association, as delivered at Olney, Ill., several weeks ago, was then read by Dr. J. G. Vogt. It proved very interesting and entertaining, and it is to be regretted that all the members of the society could not hear Dr. McCormack. A motion was made and seconded that all contract township pauper practice should be abolished upon termination of existing contracts. Motion was argued and an amendment was offered that all contract practice should be abolished upon termination of existing contracts. Discussion lasted for some time and matter was finally tabled. As the meeting was called for the pleasure of the members, all other business was dispensed with, and after a hearty dinner the remainder of the day was spent in bowling, fishing and rowing upon the lake. Before the conclusion and adjournment of the meeting Dr. Fyke made an interesting talk, and we are proud to recall his remark that "the Clinton County Medical Society is better organized than any other in his district."

CHICAGO MEDICAL SOCIETY.

JOINT MEETING OF THE CHICAGO NEUROLOGICAL SOCIETY AND CHICAGO MEDICAL SOCIETIES.

The meeting was held May 2, 1906, with Dr. Charles L. Lodor in the chair. There was a symposium on Apoplexy. Papers were read as follows: 1. The Causes of Apoplexy, by Dr. Charles Louis Mix. 2. The General Symptoms of Apoplexy, by d'Orsay Hecht. 3. Cerebral Localization in Apoplexy, by Dr. Sydney Kuh. (See page 41.) 4. The Differential Diagnosis of Apoplexy, the Apoplecticiform Attack, Uremic Conditions, Etc., by Dr. Bertram W. Sippy. 5. The Prognosis and Treatment of Apoplexy, by Dr. Julius Grinker. (See page 38.)

A regular meeting was held May 9, 1906, with Dr. E. C. Seufert in the chair. Dr. George F. Hawley read a paper on Ethyl Chlorid Anesthesia. This paper was discussed by Drs. Hallberg, Peck, Suker, and in closing by Dr. Hawley.

Dr. Joseph L. Miller read a paper on The Experimental Production of Arteriosclerosis in Rabbits, which was discussed by Drs. Matthews, Stanton, Lewis, Croftan, and in closing by Dr. Miller.

Dr. Charles C. O'Byrne read a paper on Injuries of the Liver, which was discussed by Dr. Lewis.

Dr. Heliodor Schiller read a paper on Chorea.

Adjourned.

DISCUSSION ON DR. HAWLEY'S PAPER.

Dr. C. S. N. Hallberg:—I was surprised to learn that thirty out of fifty specimens examined were impure. I would like to ask what the character of the impurities was.

Dr. Hawley:—I do not know. The foreign journals, speaking of this anesthetic, made the statement without telling the character of the impurities.

Dr. Hallberg:—These haloid ethers were introduced about twenty years ago. They were used considerably at that time, but did not seem to gain much favor. It is only recently that they again came into favor, largely because of exploitation by the manufacturers. The trouble with ethyl chlorid is that it can not be kept in ordinary containers on account of its volatility; therefore various preparations or mixtures of ethyl chlorid, chiefly with antiseptics, such as iodoform, phenol, iodine, etc., are placed in tubes and a spray from the solution is used for local application.

The essayist, in summing up his paper, stated something that it is important to remember, and I would like to see papers brought before this society introducing new agents of this character based on scientific work and not simply be quotations from a lot of antiquated authorities, mostly of foreign origin, very dubious, and indorsing particularly mechanical contrivances. I suppose that is the chief value of the presentation made in this paper.

A few weeks ago a paper was read before this society on somnoform, which was nothing but an exploitation of that particular mixture. Ethyl chlorid is an official preparation with a definite composition, but we ought to have definite information on its effects in order to determine whether it is preferable to chloroform and ether, or the old A. C. E. mixture, anesthol or other similar compounds.

Dr. W. H. Peck:—I have used ethyl chlorid in operations on the eye and have found it very satisfactory. There was no subsequent vomiting and very little general disturbance in the way of resistance on the part of the patient while the anesthetic was being administered. One great advantage of ethyl chlorid over ethyl bromid is that it gives more relaxation. In operations on the throat the bromid causes severe contraction of the muscles, and unless you have previously introduced a mouth gag it may be impossible to get the mouth open in time to operate until the patient is coming out from under the anesthetic, and the bromid of ethyl can not well be repeated. Just the opposite is true of ethyl chlorid.

Another great advantage is in the anesthesia continuing fully four times as long as it does with the bromid. I have given the latter very frequently for ten years without any ill effects whatever, but the brief period of anesthesia and the contraction of the muscles are two great drawbacks to its use.

I am very glad that Dr. Hawley showed this apparatus, and the point he made about its not requiring the introduction of gauze is a decided advantage. The gauze freezing might interfere very seriously with the patient getting fresh air. In using the chlorid of ethyl it is best to use it from a glass tube, because then you can see how much of the anesthetic you are giving.

Dr. George E. Suker:—Ethyl chlorid has a decided advantage in certain classes of work, particularly in nose and throat work, but not in eye work, mainly because the patients come out from under the anesthetic with a shock. In enucleations and lid operations, and such others as do not open the globe, ethyl chlorid is of advantage, especially in alcoholics and arteriosclerotics.

I have seen Dr. Hawley use this apparatus and I think it is a good one. I am sure that he had no intention of exploiting the product. With it you can gauge accurately the amount of air and anesthetic given, and you can crowd it when desired. The blood pressure is not interfered with, nor is the respiration. There is very little salivation.

Dr. Hawley (closing the discussion):—The proof of the pudding is in the eating thereof. No one individual has experience enough in the use of any drug to establish its full value. It requires the accumulated evidence of many. In my paper I endeavored to present the opinions of the best and most widely known men in our profession, many of whom are still comparatively young and living in

this country. I am positive they would most decidedly object to being referred to as antiquated. It is only by a careful study of the reports of the many that one can come to any satisfactory conclusion upon any subject, whatever that subject may be. While, perhaps, it might be difficult to judge from early reports the value of ethyl chlorid as a general anesthetic in minor operations, still, as time passed and the drug was used more and more widely and with less danger, statistics show conclusively that ethyl chlorid can be placed at least on a par with laughing gas as to safety, economy and ease of administration.

DISCUSSION ON DR. MILLER'S PAPER.

Dr. S. A. Mathews:—It is hard to add anything to what Dr. Miller has said. The pathologic conditions produced by adrenalin in rabbits have been known for several years and various explanations have been offered. It is generally based on a very marked rise in blood pressure and the shock it causes to the tubes of the vascular system. Adrenalin acts on the muscle, causing a marked spasm or contraction of the blood vessel, and it is also thought that it contracts the small vessels that carry nutrition to the walls of the larger vessels, shutting off the blood supply and producing gangrene, the same as in ergot poisoning. Although this is a feasible theory, yet it is probably not true, so that there is really no explanation of the way adrenalin acts.

One would think that the rise in the blood pressure would jar the vessel wall sufficiently to cause a rupture or tear and tend to produce an aneurysmal condition, but that is a mechanical effect. Adrenalin produces a very transient effect, depending on the size of the dose and the method of its administration. A very small dose produces quite a marked rise in blood pressure, lasting about one minute. Double the dose and it lasts three minutes. With a still larger dose the blood pressure may not go higher than with the small dose, but it will continue longer, sometimes for half an hour or more. That evidently depends on the power of the tissue to destroy adrenalin, the larger dose remaining in the animal much longer. If you withdraw the blood from an animal into which you have injected 1 c.c. of adrenalin and inject it into another animal you get a rise in blood pressure, showing that the adrenalin has not passed from the tissues. It is absorbed very slowly, causing a marked contraction of the blood vessels in the region in which it is injected.

Barium chlorid has been used to some extent, and in comparatively small doses it causes a marked rise in blood pressure. In large doses it affects the heart considerably like digitalis, increasing the systole and diminishing the diastole, and eventually the heart gets into a very irritable condition: becomes seemingly overstimulated and stops. Just why it produces a different change in the blood vessels from adrenalin we are unable to say, unless it follows the rule of certain metals affecting more the inner lining with which it is in contact, setting up a degeneration purely toxic and not mechanical. One cubic centimeter of barium chlorid hardly produces sufficient rise in blood pressure to cause any marked dilatation of the blood vessels and injuries from its mechanical effects. The rise in blood pressure is gradual, so that the blood vessels have time to adjust themselves to the change without producing any marked deleterious effects. Physostigmine and other drugs have also been tried, but so far they are commercially without value. If it were possible to hold down the rise in blood pressure produced by adrenalin we could see whether the change is due to the rise in blood pressure or to the toxic effect of the drug. Thus far such a drug has not been discovered.

Dr. Stanton:—My own experience with this work has been confined entirely to adrenalin. Last winter Dr. Pierce and I, at Albany, undertook to study the sequence of the lesions produced by adrenalin. Our results were practically the same as Dr. Miller's. After four or five injections of about 3 minims of a 1/1,000 solution, giving it on alternate days, we found in the vessel wall of the media a necrosis of the muscle, which was promptly followed by calcification of the necrosed area.

A still later change which is of great importance as an analogous process occurring in human arteriosclerosis is the repair process. Some considerable time

after the primary injection, about six to nine weeks, when the animals are killed, there is found a repair process, in many ways quite analogous to the repair process found in human arteriosclerosis. The repair process is chiefly confined to the intima and consists in the proliferation of the endothelial cells and the sub-endothelial tissue. I think that this point of the repair process is an important one.

Dr. C. J. Lewis:—I would like to ask Dr. Miller whether there is a chemical change in the tissues which causes the dissociation of the calcium salts, causing them to drop out from the walls of the vessels.

Dr. A. C. Croftan:—From the standpoint of the clinician it is, of course, very important to determine what factors can produce arteriosclerosis in human subjects, and, however interesting and suggestive these experiments on animals may be, they impress me as not having any exact analogue in human pathology. A simple rise of blood pressure, persisting for a few days or even weeks, occurs in the human subject in a variety of conditions without causing the phenomena of arteriosclerosis nor degenerative changes in the arteries similar to those described in these experiments. In the latter the inroad is more violent, more sudden than one would probably ever observe in man, and the toxic element, moreover, can not be excluded.

Both in human subjects and in experimental work one must distinguish between simple hypertrophy and true degeneration of the arterial walls: a denegeration which first, presumably, involves the intima, and secondarily the other coats, and which in all probability is due to a toxemia, causing chiefly degeneration of the arteries and not necessarily high blood pressure. In hypertrophy, due to high blood tension alone, we might get degeneration of the muscular and elastic fibers in the media from continued overstrain, with pressure, possibly, on the vaso vasorum, and resulting secondary changes in the intima. In human subjects the former process—i. e., primary degeneration—is more common, and there are forms of true arteriosclerosis in which no tissue except the intima is involved, in which the blood pressure remains low throughout and in which there is neither thickening nor hardening of the arteries.

A criticism I might offer is this: Why not use for these experiments pressure-raising substances that are found in putrid bowel contents or that are retained when the kidneys fail to eliminate properly, or that are found circulating in hepatic insufficiency and in many conditions in which metabolism is perverted? If all this very tedious and difficult work is to be done, why not go at it from the standpoint of pathology rather than from the standpoint of pharmacology? Nobody will swallow barium chlorid or adrenalin in large quantities, but hundreds of persons have renal insufficiency, intestinal putrefaction and hepatic insufficiency which all lead to the flooding of the blood with pressor poisons.

Anent Dr. Miller's and Dr. Stanton's quotations of other authors who have worked along this line, I wish to call attention, with all due modesty, to a little work I published in 1900, in which I experimented with such intermediary products of metabolism, viz., the group of purin bases, bodies that we know to be congeners of uric acid. By injecting these bodies into rabbits I produced both high blood pressure and certain changes in the blood-vessel walls, particularly in the kidneys, which, as far as I know, are histologically indistinguishable from the ordinary changes observed in arteriosclerosis in man. I was injudicious enough to publish this work, which I intend to resume some day, in an American journal, hence my work has so far only been recognized abroad; if I had published my article in the *Russky Vrach* under the name of Dobrofsky it is quite likely that more attention would have been paid to it in this country.

Dr. Miller (closing the discussion):—I was very glad to have Dr. Stanton say that he was the first to demonstrate that in the process of repair following these changes the intima takes part. I did not mention that phase of the subject in the short time at my disposal.

Regarding the chemical changes, nothing has been done in that line, as far as I am aware.

Regarding the statement made by Dr. Croftan, adrenalin is a substance which

is normally found in the body, hence his criticism is unfounded. Secondly, we do administer these drugs by mouth, and it is possible that these changes may be produced in this way.

DISCUSSION ON DR. O'BYRNE'S PAPER.

Dr. C. J. Lewis:—The last case reported by Dr. O'Byrne reminds me of one I attended in 1871. The boy was run over and I could not determine the exact nature of the difficulty in the abdomen at the time. After about ten days the abdomen became quite distended. I had a surgeon aspirate, and he obtained rather a large amount of a gall-like fluid. Undoubtedly the pressure of the wagon wheel which passed over the boy had ruptured the liver. The boy lived four weeks. A postmortem was not performed.

A regular meeting was held May 23, 1906, with the president, Dr. C. S. Bacon, in the chair. Dr. G. Frank Lydston read a paper on A New Method of Anastomosis of the Vasa Deferentia.

DISCUSSION ON DR. LYDSTON'S PAPER.

Dr. M. L. Harris:—Through the courtesy of Dr. Lydston I have had the pleasure of becoming acquainted with this operation, which seems to be the simplest and most successful method of anastomosis which has been presented to us. I will not discuss all the indications for the operation which he mentioned, but I believe that many of them are well taken and that, having now this simple method of restoring the continuity of the vas, it will open up a large field of usefulness for this operation. It is a simple and most ingenious method.

The following papers were read in a symposium on Asepsis and Antisepsis: Obstetric Asepsis and Antisepsis, by Dr. J. B. De Lee. The Action of Antiseptics on the Parasite, by Dr. Adolph Gehrmann. Asepsis and Antisepsis in Gynecologic Practice, by Dr. J. Clarence Webster. Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur Filtered Water, Steam and Formaldehyd Sterilizers, and Formaldehyd Disinfection of Rooms, by Dr. A. Goldspohn. These papers were discussed by Drs. Schiller, Holmes, Hallberg, Yarros, and in closing by the essayists.

DISCUSSION ON ANTISEPTICS SYMPOSIUM.

Dr. Heliodor Schiller:—We have had two important statements made this evening, one by Dr. De Lee and the other by Dr. Webster, which show that in spite of all precautions and care for antisepsis and asepsis, even the most skillful surgeons are not able to prevent death by septic infection. Ninety-five per cent. of puerperal infections are streptococcus infections, except the gonorrheal infections, and the majority of infections following operations are streptococcus infections. In obstetrics we are not so astonished about this. It has been found that in 30 per cent. of women before, during and for two or three days after labor, large numbers of pathogenic streptococci are found in the cervix. Cases of death have been reported occurring in women who have never been examined. This shows that prophylaxis alone never will prevent death from septic infection. We will have to look for other means of strengthening the body against infection. It has been advised to produce a hyperleucocytosis, because phagocytosis is one of the means of the body to ward off or combat infection. The injection of nucleinic acid has been advised for this purpose, a day or two before the operation, and the injection of dead streptococci. The results produced by this means are not yet great enough to permit of drawing any conclusions. But we have another means and that is the antistreptococcus serum. Marmorek's serum was a univalent homologous serum, powerful only against homologous streptococci. Now polyvalent sera are being prepared by mixing several strains of streptococci from men, producing a heterologous serum which will give excellent results if used in time.

Dr. Rudolph W. Holmes:—I agree most heartily with Dr. De Lee's opinions expressed in his paper. However, there is one thing I would like to call to his attention regarding the history of puerperal infections. Dr. Alexander Gordon, who practiced during the latter part of the eighteenth century, deserves a high place in the development of our knowledge of puerperal fever. He strongly

corroborated the discovery of others that erysipelas and puerperal infections were cognate; he declared that the disease was inflammatory in character, that it was due to a specific contagion or infection, which was not transmitted through the atmosphere, but by means of the attendant (physician or midwife), who previously had confined a woman afflicted with the disease; further, the disease was prevented by attendants carefully washing themselves and fumigation of their clothing.

I can not let the opportunity go by of making a few remarks concerning the responsibility of the attendant when he is so unfortunate as to have an infection. In the majority of cases unquestionably the uncleanness of the physician, the nurse, instruments, etc., are at fault; in the minority of cases, about 10 per cent., infection is due to circumstances beyond the control of the physician. The popular idea of the laity that the physician is invariably culpable should receive the strongest refutation from the profession.

Much of the error due to physicians is dependent on the lack of education of students while in school. Rarely are students properly instructed in the methods of proper hand sterilization, and, as important, how to keep them clean after thorough washing. How often we see surgeons contaminate their hands by stroking their hair, scratching themselves or touching unclean objects! Then, too, the technic of obstetric cleanliness is more complicated than surgical asepsis; few in this regard are fully informed. Proper disinfection of the parts is well nigh impossible without shaving. Physicians claim patients object to this. Such reasoning is fallacious, for I have met only one woman who seriously objected to the procedure. What is indispensable in gynecologic work should be equally demanded in obstetrics with the greater inherent liability of infection.

Another cause is examining women in labor under a sheet, with the idea of conserving women's modesty. Such a procedure is a travesty on women's good sense and the essentials of obstetric cleanliness. If a woman does object to the exposure I am sure it is due to the fault in the deportment of the physician more than the dictates of her womanly reserve. Women appreciate the necessity of proper exposure.

Dr. Rachelle Yarros:—I want to testify to the wonderful reduction in mortality in the locality where the lying-in dispensary is located. I began to work in that district ten years ago, and I remember vividly the number of babies left without a mother, the mother dying of puerperal sepsis. The social conditions are still the same, and those who know can testify to what effort it meant to reduce the mortality; but it can be done, and if it can be done under those conditions it can be done under more favorable ones. The students think that these women have wonderful resisting powers, but that it not the case. It is the change in the technic. Dr. De Lee's mortality is wonderful. I am sorry that ours is not so good. The Physicians' and Surgeons' Dispensary has been established seven years. Out of 3,000 cases we had only one death, and then we suddenly had two deaths, which thus far I have been unable to account for in any way. Our technic must be as good as we can make it, because the students are always on hand to watch what we are doing. I think it would be excellent if every practitioner would have a few students around to watch him. They are critics. We never make more than two examinations in an ordinary case of labor: one by the interne and one by the student. We do not use gloves, although we recognize the value of them. Not only are we careful in making the examinations, but we are also careful in conducting the third stage of labor, not forcing the placenta out, but letting Nature attend to that. There is better involution and less danger of sepsis.

Dr. C. S. N. Hallberg:—I would like to ask Dr. Gehrmann whether he knows the comparative value of phenol and cresol. It is claimed for cresol that its antiseptic power is fully as good as that of phenol. It is less irritant and less poisonous. The compound solution of cresol is official in the pharmacopeia (*liquor cresolii compositus*), which should be recommended by physicians.

There is also something to be said with reference to the technic of the preparation of these preparations. I expected to hear mention made of the rubber solu-

tion to be used in place of rubber gloves. The formula directs that benzin should be heated in a tightly stoppered bottle on a water bath. How many accidents have resulted from that practice I do not know, but an accident occurred at the Mercy Hospital following an attempt to boil alcohol for the purpose of sterilizing it; quite a common procedure, as I learn. It is monstrous, I think, that a statement like this should appear in a paper published in the *Journal of the American Medical Association* a year and a half ago, and that it should go unchallenged. I fear that many an accident has happened as the result of that; boiling benzin in a tightly stoppered bottle. So I suggest that the technic of the preparation of these preparations should not be overlooked.

Dr. De Lee (closing the discussion on his part):—No lack of appreciation or recognition of the work of Drs. Gordon, Oliver Wendell Holmes and others was present in my mind for the part they took in hammering into the lay and professional mind the importance of contagion. Every one of them believed that puerperal fever was contagious, that the physician could carry it from one patient to another. Oldham, before Gordon, emphasized the importance of contagion, but the man who first discovered that this was an infection was Semmelweis. He was the first to show that a woman can infect herself. Later it was believed that the infection came from the outside. Dr. Jaggard used to tell us that puerperal fever was exogenous and not endogenous.

Another statement that I wish to correct is that the lying-in hospital has had only one death in 7,000 cases. We have had six deaths, three from spontaneous rupture of the uterus; one death was due to chloroform, one to pulmonary embolism and one death to puerperal fever. They were all unpreventable, except, perhaps, the death from sepsis. The use of gloves has been instituted in the dispensary for four years. It works well and is not extravagant.

The presence of streptococci in the genitals can not be denied, but they are not virulent unless the conditions are good for their development. Prolonged labor, too much rubbing of streptococci into the wounds, favor the entrance of streptococci into the blood.

The existence of immunity can not be denied. Certain women possess immunity against infection, while other women are unusually susceptible to infection.

Dr. Gehrmann (closing the discussion on his part):—As to the disinfection of the hands of which Dr. Goldspohn spoke, a method has been suggested for proving the results. Fill a jar about half full of bouillon with some sand in the bottom. When the hands have been properly prepared, insert them into the jar, rub them well in the sand, and then place the jar in an incubator.

As regards formalin disinfection, I have been greatly interested in this work and have gone through the whole matter of disinfection with formaldehyd. The boiling method, which now is looked on as the chief scheme in Europe, is a stage along near the end in my experiments. You can disinfect with it like you can with other methods, but the question is whether it is the simplest and easiest way of getting the amount of formaldehyd that you want. The method advocated by the state board is a satisfactory one, but it is not the easiest and simplest one. I have tried these methods in the city health office and proved that formaldehyd is an exceedingly active germicide, either in solution or as a gas. Its rapidity may be tested by preparing a slide of bacteria for microscopic examination, then holding it for a moment over the surface of a few drops of formaldehyd in a Petrie saucer and then making a culture. This will demonstrate the rapidity with which the bacteria are fixed.

The whole problem is to get a sufficient amount of formaldehyd around the room. Every apparatus that operates from one center has the disadvantage of not enough diffusion. The permanganate method is open to the same objection. With the sheet method used by the city, one sheet for every thousand cubic feet of space places all objects in the space at least four or five feet from the sheet, so that the matter of diffusion is easily settled.

With regard to creosols, they have a strength very much like carbolic acid, but many of the preparations are made up with a resin base, a soap, and their efficiency depends on how much of heavy oil is added. If you have the substance

in the same condition as carbolic acid, the disinfecting strength is about the same. The official preparation of the pharmacopeia should be used, because it has a standard strength.

Dr. J. Clarence Webster (closing the discussion on his part):—I have also used formalin in salt solution (1 in 1,000) in cases of septic peritonitis for eight years. Preparations of formalin vary greatly in regard to the proportion of formaldehyd which they contain. In one series of specimens, bought from different makers, the percentages varied from fifteen to thirty-six. In no case was the full strength, 40 per cent., found. I have also used chinisol for seven years, both in solution and in the preparation of gauze. In the latter form it is far superior to iodoform, not possessing the odor nor toxic properties of the latter. As an antiseptic it has a powerful inhibitory influence in solutions as weak as 1 in 10,000 and is germicidal in solutions of 1 in 100. It may be used in the tissues in the strength of 1 in 1,000.

Dr. Goldspohn (closing the discussion):—Dr. Webster said that a watery solution of bichlorid is not penetrating. He can not make a more penetrating solution than the watery. Alcoholic solutions are not as potent as are watery solutions of antiseptics.

Dr. Webster:—I said that watery solutions can not penetrate fat, and, moreover, mercury coagulates the albumins.

Dr. Goldspohn:—We must understand the proper use of bichlorids of mercury. They should be used only after all fat and mucus have been thoroughly removed, and in the vagina or other similar places with mucous membranes the mercurids are out of place. But for the hands, after they have been cleaned thoroughly with soap and water, bichlorid is effective, and more so if used before alcohol. Alcohol has an agglutinating effect on the scarf skin, and if the antiseptic is used after alcohol, its effect will not be as penetrating as when it is used before the alcohol.

Dr. Webster mentioned the advantage of the dry glove, and I agree with him. It is that that lead me to investigate the sterilization by formaldehyd gas and to devise my home-made apparatus that has served to good effect in the German Hospital for six years. I had to look up the literature on formaldehyd, and it struck me that the requirements of investigators of the highest standard far exceeded the requirements of the Chicago Board of Health for formaldehyd disinfection of rooms. When I inquired I found that the bacteriologic tests of the latter were not correct. Formaldehyd gas is very excellent for disinfecting rubber gloves. Any antiseptic that is potent will affect rubber also and it will become brittle in time, but it will not become baggy, as it will if the gloves are boiled frequently in water. All other rubber goods are much better sterilized by formalin than by steam.

I agree with Dr. Webster as to the use of the uterine exploratory sound. I have no use for it in my office, although I may use it under septic conditions in the operating room to assist in deciding whether a given tumor is of uterine origin or not, but it is a very bad thing for other minor routine examinations. It gives wrong information and carries infection, and it rather discourages the general practitioner from making his diagnosis by bimanual palpation, the only correct way. The rubber solution for the hands is a good deal older than a year and a half, and its use does not originate with Dr. Murphy. It was first suggested by a German surgeon about five years ago.

SOME EVILS OF MEDICAL DISPENSARIES FROM THE STANDPOINT OF A CHARITY WORKER.*

EUGENE T. LIES,

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CHICAGO.

I conceive that, in the general acceptation of the term, a dispensary is a medical charity. As a medical charity it has the double function of healing the

* Read before the Douglas Park Branch Society.

sick and of meeting a serious need of a particular class in the community, viz., the poor. The final test of its efficiency, therefore, must be whether it really does heal the sick and whether its service reaches the actually poor. It is a curious phenomenon that so many of the great and noble activities of history which were intended originally to promote the deepest welfare of humanity have, at various stages of their progress, departed, sometimes consciously, sometimes unconsciously, from their first lofty purpose and have set up other standards and other ends. The church, once single-minded in its efforts to elevate men spiritually and to promote their complete welfare through development of intercourse with their Maker and helpful association with their fellow men, has at times allowed the vanity of men who sought to create great theological machines and gain place for themselves to drag its name down into the dust and divide mankind into competitive, hostile camps. The school, once intended as a means of subtly "drawing out" from the child his latent powers and of then gradually drawing him into the new concepts and feelings which would have actual relation to life, i. e., an institution to provide real "education," has often degenerated into a mere stuffing apparatus for squeezing into the young mind as many ideas as it could hold without laying low its possessor, with little regard to whether the matter taught was to be of any genuine service in the child's after career.

Charity even, with its primal object of giving succor to the needy, of stilling suffering, of feeding the hungry, of clothing the poor, of sheltering the homeless, has, one must say with bowed head, at certain times of its history exhibited far less concern for the welfare of the poor than for the profit of its administrators, profit in the way of social advancement, honor among men, rewards in heaven. And this perversion inevitably has led to the ignoring of the effect of charity's acts. With this motive, one's own profit, is one going to think how much of whether one's gift has served to push the recipient only down further into the slough of despond, and is one going to ask at all, "How about the poor man's tomorrow?" This attitude, necessarily, too, precludes the likelihood of our "considering" the poor in the biblical sense, of giving thought to them and their needs. Finally, I venture to say that the medical profession has lost much in the eyes of laymen wherever, through the low ideals of some of its practitioners, it has departed from its one fine purpose of assuaging pain and healing sickness. The physician, though skilled he may be, whose prime object in life is money or reputation; the quack doctor and his ally, the "patent medicine" charlatan, who, with damnable effrontery, would traffic in the faith of the suffering and the dying; the medical educator who would train his students and the dispensary directors who would seek experience at the expense of the poor man who puts himself at their mercy—all these, I submit, have been and are degrading influences in the medical profession.

Now, fortunately, in recent years, the outcry against all these essentially evil tendencies in the church, in the school, in the charitable world, in the medical profession has been so strong that reforms have had to be instituted for the purpose of making all of them more humane, first of all, and then more humanely helpful. The aim is to restore them to their original high place among the agencies intended to advance civilization. Refraining from further consideration of church and school, let us look a little more into this matter of charity and then try to see what its inner relation is to the matter of medical charities, as exemplified by the dispensaries. The modern devotees of charity are trying to place their practice upon as scientific a basis as possible. By that I mean that they are considering cause and effect; they are using the processes of analysis and synthesis; they are insisting upon diagnosis, upon prognosis, upon application of remedies exactly fitted to the ascertained needs of the poor man. In short, you see, they are really "considering" the poor, and in so doing they are following in the footsteps of the good physician. Their illustrations in support of the validity of these new methods are, as a rule, drawn from the medical profession, so that any charitable activity must be able to stand the test of these few general questions if it is to receive the indorsement of thoughtful charity workers.

1. Is its motive the welfare of the poor or the advancement of those behind the activity?

2. Does it get at the root of the trouble, and will it, therefore, help to put the recipient beyond the need of aid, or is it merely alleviating to-day's distress and pushing the fellow into to-morrow's misery?

3. Will it help to grow or to pull out another strand in the beneficiary's spinal cord? In other words, will it aid in restoring him to the ranks of independent beings or shove him from poverty into pauperism?

4. What is the social effect of the proposed remedy? Does it really annul or even diminish any of the dangers resultant upon the manner of life of the poor to their fellow men? Or, on the other hand, does it actually create new dangers?

It seems to me that these tests may with justice be applied to medical charities. And if any medical charities can not stand up under these tests they need to have brought against them the condemnatory force of aroused public opinion, and then, by reason of the fact that they deal with life or death, they must be put under rigorous law. There can be no two ways about it. That many medical dispensaries in the city of Chicago would wither under the fire of these questions is a notorious fact. How many out of all would, I have no way of knowing, but from numerous allegations I have heard from men of high standing in the medical profession itself, I should judge that the majority of them would. Let us ask these questions:

1. Is the medical charity, as represented by the dispensary, aimed at the welfare of the poor, or is it for the advancement of those in charge? The poor man is made to believe it is there for his benefit. The knowing person declares it is there for a double purpose, as a rule: to treat the sick poor and to serve as a school of experience for its practitioners. With each individual practitioner, himself, remains the responsibility of adopting either one of these motives, or both, in unobjectionable proportions. It is in those instances where the former aim is made decidedly subsidiary to the latter that the mischief is done and condemnation is called for. When each patient is looked upon merely as a bundle of possibly interesting pathologic conditions, and not as a human being in suffering who has come to the dispensary by the dispensary's own invitation to be treated for his ills, who throws himself with what might be, or may terminate in, a life or death matter, upon the mercy of the dispensary's physicians, when this is the case we have a situation that calls for the law.

2. Does the charity of the dispensary get at the root of the trouble in each patient, or does it merely push the patient into to-morrow's misery? Here again the answer of many good medical men points to their knowledge of abuses. Observant charity workers, too, know that the treatment in many dispensaries amounts to little more than quackery. The "welcome to all" is so warm that crowds flock to the dispensary in its various departments with the result that none can receive adequate attention. Where absolutely no questions are asked as to the legitimacy of the patient's request for free treatment, or where only superficial tests are made, there surely, it is fair to say, the charitable motive, viz., to heal the sick, can not rule; the treatment given can have very little potency in putting the patient beyond the need of more charitable medical aid; it is again only pushing the fellow into to-morrow's misery. Those able to pay should be weeded out from those not able to pay. Adequate registration and investigation can bring this about. Mere acceptance of the patient's word or of his poor appearance will not do; one has to go "behind the returns." If dispensaries are for the poor, precautions certainly should be taken to see that only the poor get the benefits. With many people able to pay in line with the poor, none will get proper attention. If the patient with money does not like the treatment received he is at liberty to go to a doctor and pay for service, but the poor man simply must take what is given him and keep his mouth shut. He is at the mercy of the dispensary. His incipient disease may be allowed to develop into a chronic condition and his chronic condition into death. Is this charity? Serious consideration must be given here, also, to the close relation between disease and poverty. Each, of course, can be the cause of the other. But at this point I wish to emphasize two facts: that disease is declared to be the cause of something

over one-fourth of all the poverty in this country, and that, when sickness stops the work of a wage-earner, it stops everything for him, and as a rule immediately throws him and his family over the line into the ranks of dependents. In sickness a wage-earner is forced to depend for recovery partly upon an insanitary environment, dark, crowded, small, low-ceilinged rooms, bordering probably upon a garbage-strewn alley. His illness may mean loss of his job. Now, add to this, if you will, his careless or radically wrong treatment at the hands of dispensary physicians, and you have a picture of misfortune that demands attention from those who are sincerely interested in the welfare of the poor. Surely the conscientious workers in dispensaries can not afford or care to play with a situation of this sort. Every time they fail to give proper attention to a sick poor man they are not only allowing a sick man to get sicker, but they are turning him into the ranks of poverty, deepening and prolonging his "non-earning capacity," meaning misery for all those dependent upon him for bread and shelter. This wider significance of the matter of unregulated dispensary practice is something which calls for serious attention.

3. Do medical dispensaries tend to undermine independence of character? When unregulated as to the classes who shall be entitled to its ministrations, yes, decidedly. In New York, in 1860, investigation showed that 16 per cent. of the total population were receiving dispensary treatment. In 1898, after thirty-eight years of unregulated practice, 50 per cent. were found to be receiving dispensary treatment. If you offer anything free, you are bound to have a crowd, and in the crowd there will be many who need no charity. Giving them charity when they do not need it means opening the way for dependence upon it, and you have pulled out instead of grown another strand in the spinal cord of such applicants. In the opinion of many authorities medical charity offers the easiest opening to a life of dependency. We need to recognize that there is something worse than poverty, and that is sham poverty. The outstretched hand of a person who needs no charity is the sign of a moral pervert, and the absence of moral strength is certainly worse than the absence of material goods.

4. Finally, let us ask what is the social effect of careless practice in dispensaries? It has already been pointed out that when the ordinary wage-earner is laid low by sickness he and his family quickly go over the line from independence to dependence, and any prolongation of his illness through faulty treatment at a dispensary means prolongation of the whole family's distress. Not only that, it means that a serious danger is thrust upon the family by reason of the condition unfavorable to recovery. In some diseases, like the respiratory and venereal, no one knows how many innocent beings, not only in the patient's home and neighborhood, but in his shop (provided he returns to work half cured) will be infected in ease the dispensary physician, when he has this patient in his charge, fails to do his full duty by him, either by reason of the necessity of hurrying along the line or by reason of the fact that he looks upon all of the patients as mere bundles of symptoms for his delectation and examination. In these great days of preventive charity and preventive medicine, when the leaders in both professions are spending their substance in changing conditions which shall mean good, wholesome, healthful life; when these two forces combined are making determined war upon the great white plague in its strongholds, it seems opportune to cry out against the social dangers of malpractice in dispensaries. Dispensary physicians, in such a peculiar way, have it in their power to check or to further the spread of disease in just those places where it can spread most violently. I am thinking particularly of tuberculosis. All the living conditions among the poor are favorable for germ propagation, and yet how many patients are given at dispensaries full directions for the care of sputum, how many are actually made aware of the nature of their disease, how many are told they merely have colds or slight coughs or stomach trouble? I have known scores of poor men in the second stages of consumption, who had been tramping back and forth to the dispensaries for months, and who were laboring under the pitiful delusion

that they had only a bad cold. They were given no rules to follow to prevent their own reinfection and the infection of others, with the consequence that carelessly they scattered about millions of germs which in the end may lay low scores of other human beings. But there is another effect of hurried, careless practice in the dispensaries: that upon the practitioner himself. Is he going to come out of his experience a more thorough, a more scientific, a more humane physician than when he began, or is he going to contract all the habits of a full-fledged quack: haste in diagnosis, the use of cure-alls, the passion not for healing the sick and stilling suffering, but a passion for feeling the dollars and stilling his conscience? If the latter be the case, then he will be the certain means later, when in outside practice, of helping people down the road to poverty, of intensifying and complicating the problem of the poor.

These roughly, and without statistical data, are the considerations which I would place before you on this subject. There are a number of other points that might be raised, such as the question of part payment for services and medicines, the dispensing of medicines by unlicensed pharmacists, the evil of dark, cramped dispensary rooms, the lack of suitable appliances, use of unclean bottles and jars and of inert drugs, etc., but, as a charity worker I have chosen to treat only these general aspects of the situation.

In Illinois there is no legal regulation of any feature of dispensary practice. Any commendable conditions found in dispensaries in this state exist as a result of somebody's conscientiousness merely. But there are careless managers in connection with many of them, who need a law over them. And there are charlatans in connection with others, who need the law and a very "big stick." We should have a dispensary law. New York has such a law and it is working well. It provides for registration of patients, investigation as to patient's ability to pay, display of signs stating that the dispensary is for the poor only, adequate waiting rooms and licensed pharmacists. It would seem that if a body like the Chicago Medical Society would join forces with a strong organization like the Chicago Bureau of Charities, and possibly some other agencies of like standing, together they could get through the next legislature a bill along the lines of the New York act. In the meantime, however, the Bureau of Charities stands ready to aid, free of cost, any dispensary in the city with its investigating facilities and take the responsibility of saying who are the really poor among the applicants for medical relief. This offer is made because it is realized that the element of numbers forms a large part of this whole problem. If that can be legitimately reduced, then these other great evils which have been touched upon will necessarily become reduced in extent and potency. Medical dispensaries certainly have a place among the charitable and educational agencies of any community. We must have them. But we must not necessarily have them with the evils of the serious sort I have mentioned attached. The Bureau of Charities, standing, as it does in this community, for sound charity, for charity that thinks, that looks deeply for causes and right remedies for poverty, that aims to look ahead, beyond to-day's problem and all around it, offers a strong protest against the continuance of abuses in these agencies. But, on the other hand, it stands ready to help in removing these abuses and making it possible for the medical charities of Chicago to perform the high and noble humanitarian functions they were originally intended to perform.

TREATMENT OF ECLAMPSIA.*

A. E. DENNISON, M.D.

CHICAGO.

The term eclampsia is sometimes used when speaking of convulsions occurring under other circumstances than pregnancy. As the discussions to-night are limited to pregnancy and labor complications, I will speak only with reference to that period. In the treatment of this condition, as in any other, it is important

* Read before the Douglas Park Branch Society.

to take into consideration the pathologic conditions to be combated in order to institute proper methods. Individual cases of eclampsia differ materially in the morbid conditions present. While all true cases are suffering from a toxemia, the source of the toxemia may be due to a diseased condition of various organs, namely, the kidneys, the liver, the gastrointestinal tract or the lungs. These may not be primarily the seat of trouble, but it may be secondary to a cardiac disease. Kidney disease, which is probably the most frequent cause of the toxemia, may not be either primary or secondary to cardiac trouble, but may be a temporary trouble, caused by pressure upon the ureters, thereby causing an engorgement of the organs from damming back of the urine, producing minor pathologic changes in the excretory portions of the kidneys, evidenced by albumin and casts in the urine. While the general practitioner is sometimes called upon the scene for the first time in the case of eclampsia, when the patient is in a convulsion or has just passed through one, and has not time to ascertain the source of trouble, yet his knowledge that the morbid condition present is that of toxemia indicates the treatment. Later, when the convulsive symptoms have subsided, a more minute study of the case can be made to obtain a deeper knowledge as a guide in the future management of the case. While observation and study of eclamptic seizures dates back as far as history itself, it is only in comparatively modern times that the knowledge has been obtained that a toxemia is present. It is due to this fact that modern methods of treatment have reduced the mortality of this disease from 33 to 7 per cent.

I wish to speak first of the prophylactic treatment. By this I do not mean the treatment of already diseased organs tending toward toxemia and convulsions, but the treatment and general management of pregnant women who start in pregnancy with organs in a fairly normal condition. What conduct on the part of such a patient tends to produce disease of the organs favoring toxemia? Cardiac disease is not more likely to occur during pregnancy than under other circumstances. Disease of the liver, as congestion, is more likely to occur in pregnancy because of the increase in its function from a greater amount of food taken, and because the change in appetite may induce the patient to take food that is more difficult of digestion.

The same causes may produce disease in the gastrointestinal tract, but the organs most likely to become affected are the kidneys. The healthy woman, then, should have her habits so regulated as to be least likely to suffer from these causes. Indigestible articles of food should be avoided, such as spices, rich sauces, fried dishes, etc. The diet in general need not be greatly restricted otherwise. But an effort should be made to have the diet properly proportioned between the various food elements. Fresh air and a moderate amount of exercise are of importance, but to my mind the most important thing to look after is the manner of wearing clothing, abuse of which is very common. Bands around the waist, from which clothing is suspended, crowds down the abdominal organs and increases the intrapelvic pressure, which is already increased by the distended uterus, causing constipation, which still further increases the pressure, thus partially occluding the lumen of the ureters, tending toward toxemia by producing disease of the kidneys. It is important to have all clothing suspended from the shoulders. There should be no restricting bands or tight clothing about the body. Wool worn next to the skin is preferable in a climate such as this, as it favors a freer skin circulation and thereby increases elimination by this channel and also lessens the risk of exposure to cold. The above are some of the important points to look after in pregnancy to keep the healthy woman healthy. No medicinal treatment is indicated. In fact, an important thing to teach these patients in order to prevent trouble is to abstain from taking the various nostrums placed upon the market ostensibly for the purpose of making labor easy.

When we have a patient who starts in pregnancy with organs diseased or which have become diseased before coming under our care we have indicated a treatment which is not prophylactic, but from the start is active and combative, for the

reason that eclampsia is not a disease but a symptom of a disease or group of diseases before enumerated. No physician is doing his duty in this class of patients who does not make a thorough examination as soon as they come under his care, and, finding pathologic conditions, repeat the examination at intervals throughout the remaining term of pregnancy. A simple examination of the urine for albumin is not sufficient, for some of the fatal cases of eclampsia occur in those who have no albumin in the urine, but in these cases granular and fatty casts can be found by diligent search, and a postmortem will show well-marked disease of the kidneys. The use of the microscope is all important in order to keep properly posted on the condition of these organs. Chemical and quantitative tests of the urine are of importance to ascertain the effect of treatment and as a guide to future measures that should be adopted in treatment, also as an aid in prognosis. In the endeavor to carry a patient in this class to full term the watchword should be "elimination." There should be a daily free evacuation of the bowels, to bring about which any of the following remedies may be used: Colycein, compound licorice powder, cascara sagrada, castor oil, calomel, etc., avoiding saline cathartics, as it has been found that these salts tend to produce convulsions when that tendency already exists. Bathing, the temperature and frequency of which depends upon the urgency of the symptoms, is essential. Diuretics may be required when the urine is scant, such as spirits of nitrous ether, digitalis, calomel and others, avoiding again the salines for the reason given before. The diet depends largely on the pathologic condition. When the liver or gastrointestinal tract is at fault a nutritious and easily digested diet is most useful. Fruit, light vegetables, such as lettuce, celery, water-cresses, spinach and asparagus, the latter of which is especially beneficial because of its diuretic effect. Eggs may be eaten, also stale bread, milk, meat in moderate amount, avoiding fats and sweets and articles particularly hard to digest. Pepsin and hydrochloric acid may be prescribed to promote digestion. Intestinal antiseptics are, I believe, of doubtful value. When cardiac trouble exists with anemia, iron preparations may be prescribed with nutritious diet as above.

When the kidneys are the offenders the severity of the trouble should be ascertained when possible. When albumin is present in moderate amount, with very few casts of epithelial type, placing the patient in bed for a short time, bringing about thorough elimination and restricting the diet to milk may bring about a beneficial change in the condition to such an extent that the patient may be able, during the remaining portion of her pregnancy, to take a fairly liberal diet without harm. When, however, granular and fatty casts are found in the urine, whether there is little or much albumin, or when there is edema, I believe it is important to at intervals restrict the diet to milk throughout pregnancy, and between the times of such restriction allow such food in addition to milk as is least likely to cause an excess of nitrogenous excreta. The object of departing from a strict milk diet is that pregnant women do not maintain their strength when limited to it for a long time. What has been said so far has had reference to patients that have had no eclamptic seizures. Convulsions may occur at any period during pregnancy and require special treatment. If it occurs at any time before full term, I believe the first thing to be done is to narcotize the patient as speedily as possible, for the tremendous activity of the muscles rapidly increases the toxic material in the blood by muscular disintegration. The two most important agents for this purpose are chloroform and chloral hydrate. All others that have been vaunted from time to time are, I believe, inferior. Chloroform may be immediately administered until the patient is under its influence, then chloral may be administered in thirty-grain doses, per rectum, every three hours for three or four doses. In the meantime the patient should be placed in a mustard bath, at a temperature of 98°, for twenty minutes or more, then rolled in blankets. A cathartic should be administered, croton oil in very urgent cases, or calomel in a ten-grain dose, with bicarbonate of soda, when the case is not so urgent. When there is threatened heart failure, which may occur from great increase in arterial tension or from paralysis of the cardiac center, digitalis and

nitroglycerin may be administered. After the convulsion has subsided the patient may remain in a comatose condition for some time or remain unconscious, with great restlessness, in which she throws herself from one side of the bed to the other. Here the best remedy is a hypodermic dose of morphin, $\frac{1}{4}$ gr., and atropin, $\frac{1}{150}$ gr. This may be repeated several hours later if the restlessness returns. While morphin has the effect of blocking up the secretions, and therefore is not an ideal remedy in a case of toxemia, its action is marked, and as two or three doses at long intervals is usually all that is required it would have little influence in blocking up the secretions, I believe it should be employed. If the patient survives the convulsion the treatment should then be very much the same as that described for patients with similar pathologic conditions in whom no convulsions had occurred, except that small doses of some narcotic, as chloral, should be administered until the greatest danger of repeated convulsions has passed by.

As to interruption of pregnancy, I believe it should not be considered except in patients in whom the kidneys have been found to be diseased, and after being under treatment for a considerable length of time the disease is steadily growing worse, or in patients in whom convulsions occur repeatedly and severely, or are of increasing severity, while the patient is under constant treatment. When eclampsia occurs in the latter stages of pregnancy, or at full term, and labor pains have set in, it is advisable to forcibly and carefully dilate the cervix while the patient is under the influence of chloroform. This, I think, is best done by the fingers; then, by applying forceps, or performing version, the labor should be completed as soon as possible. The activity of the muscles during labor would add toxic material to the blood and would also increase the work of the overstrained heart. Besides, the presence of the child in the uterus after labor pains have set in would serve as an irritant to an already overexcited nervous system. The last statement might seem to be contradicted from the fact that convulsions frequently recur after labor has been completed, but I think the reason for this is, as just stated, because of the increase of toxic material added to the blood by the muscular activity during labor, and because it is more difficult to bring about speedy elimination at this time. Having completed the delivery, the other points of treatment are quite the same as when eclampsia occurs at any other time, except that it is not best to place the patient in a tub bath because of the risk of infection to which these patients are particularly susceptible. A substitute can be had by wrapping the patient in sheets wrung out of hot water, which can be done without removing the patient from the bed. The likelihood of convulsions being repeated after labor is completed makes it necessary for some one to remain in constant attendance for a day or two who is capable of administering chloroform, as it is advisable to repeat its administration each time the convulsions occur. The patient, having survived the eclamptic seizure, should remain in bed for a month or more on a strictly milk diet. Cathartics and diuretics should be administered according to the needs of the individual case.

A CASE OF HERNIA OF THE LINEA ALBA COMPLICATING TUBERCULOSIS OF THE LUNG.*

BAYARD HOLMES, JR., A.B., M.D.

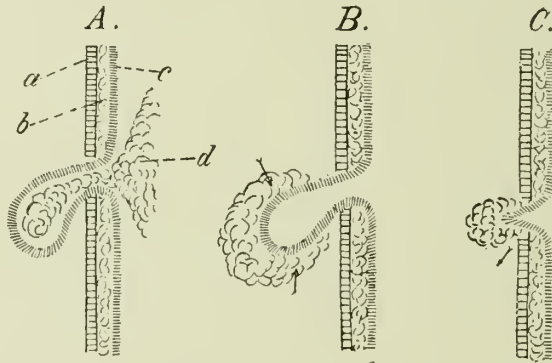
CHICAGO.

I present the history and physical findings of a case of hernia of the linea alba, or epigastric omental hernia, with a few remarks on the subject as a whole. D. E., aged 28, Irish-American teamster, had the usual diseases of childhood and remembers that his whooping cough lasted for more than six months and that his mother has always attributed his later condition to that illness. From his twelfth to his twenty-fourth year he was free from disease, except colds, which usually caused severe attacks of coughing. In the winter of 1901 he suffered from a very acute cough, which was followed in a few days by complete obstruc-

* Read before the Southern District Chicago Medical Society, February, 1906.

tion of the bowels and necessitated his removal to the Cook County Hospital. As he was being prepared for operation he had an attack of fecal vomiting, and, following this by a few minutes, the passage of large amounts of gas and fecal matter per rectum. No operation was performed. He left the hospital the next day and remained well until the fall of 1902, when he began to cough again. At the end of about a week of coughing he suffered acute pain at the pit of the stomach. This pain was present not only during a paroxysm of coughing, but immediately after eating a meal, and it was especially severe after drinking beer. For this reason he stopped drinking all cold drinks and began to eat small amounts of food at a time. Carrying heavy boxes caused intense pain, so that he stopped work and began to visit the many dispensaries of the city. A diagnosis of ulcer of the stomach was made repeatedly, and efforts were made to make gastric analyses and have him go into the hospital for treatment. He refused all such advice and was taking "patent medicines" when I first saw him in January, 1903, at the Brainard Polyclinic, a year and three months after the acute pain began.

Physical examination showed a young man greatly reduced in flesh, with a drawn, hunted expression. Weight, 120 pounds, as compared with 150, his regular weight. Chest examination showed a rapid heart, increased twenty beats by



Schematic drawing of: A, omental hernia; B, fatty hernial sac; C, fatty tumor simulating hernia in the center of which a real hernia is forming; a, fascia; b, subperitoneal fat; c, peritoneum. (E. von Bergmann.)

coughing. Slight increase of relative cardiac dullness, but no murmurs. Lungs gave positive evidence of an acute tubercular process in the right apex, extending down to the third rib in front and the lower border of the scapula behind. The abdomen was scaphoid but rigid, palpation difficult. The only tenderness was in the epigastric region over an area about the size of a dollar. One point the size of a cent was extremely sensitive. As I was feeling it the patient coughed and a hard round mass protruded through the fascia, but disappeared immediately. On continued palpation it became evident that a firm, warty mass remained, which mass became a tumor on coughing. This tumor was an inch above and a half inch to the right of the umbilicus and corresponded to the tender point. No defect of the fascia was evident, except during coughing. Stomach tympany was decreased, the lower border extending an inch below the costal arch and three inches from the hernia. Inflation of the stomach with gas produced immediate pain, which was so severe that I passed a stomach tube to relieve it, but was able to prove that the stomach was decreased in size. Temperature was 99.4, respirations 20. Blood examination gave 9,000 leucocytes per c.cm. The urine was negative except for decreased amount in twenty-four hours. Stomach analysis after a test breakfast gave HCl 20, total acidity 65. No blood, pus or sarcinae, but a considerable amount of mucus. A second examination a month later showed HCl 25, total acidity 85. An examination of stools showed digestion of all forms of

food, with no blood or pus. The test breakfast caused pain in ten minutes. The diagnosis of hernia of the linea alba, with probably a band of omentum extending to the stomach, was confirmed by Dr. B. W. Sippy at a clinic at Rush Medical College. Operation was advised, especially because the tuberculous process was encouraged by the starvation. This starvation was self-imposed, because of the pain following eating and drinking. I saw the patient repeatedly at intervals of a month until he died of a diffuse tuberculous infection of the right lung in August, 1905. The history during that time showed that owing to the great pain produced by food in the stomach he had slowly starved and thus allowed the rapid spread of the tuberculous disease. He consented to the operation in July, but owing to the bad prognosis given the family they dissuaded him from it. I did not secure an autopsy and the undertaker did not open the abdomen.

Epigastric hernia has been recognized as a cause of pain at the pit of the stomach for many years, but owing to its rarity is not mentioned in popular textbooks of general medicine and surgery. The condition occurs more frequently in males than females. It appears first in young adults, but does not produce symptoms until some condition causing increased intra-abdominal pressure supervenes. This condition is probably frequently overlooked in the examination of patients complaining of distress after eating and mild dyspepsia. The etiology is necessarily varied, but from examination of the reported cases and my own experience in four cases I should say that the primary condition must be a weakness of the fasciæ composing the linea alba. This weakness probably follows long-continued illness producing anemia and associated with increased tension within the abdomen. Typhoid fever, whooping cough or bronchopneumonia following measles and diseases of the nose and throat which are accompanied or followed by cough are especially liable to produce this condition. Constipation, pregnancy, flatulency and ascites should be considered as increasing intra-abdominal pressure. The pathology shows a separation of the crossed fibers of the thin linea alba around one of the exits of the periumbilical arteries, veins and nerves, through which the pre-peritoneal fat is pushed to form a dilator, as occurs in femoral hernia. The parietal peritoneum which is adherent to the preperitoneal fat is dragged in later to form the hernial sac. A portion of the omentum may now enter the sac and become adherent, thus forming a band extending from the anterior abdominal wall to the stomach. In the majority of cases in which symptoms are present the omentum has become adherent in the sac, but there also exists a condition in which pressure upon a nerve caught in the ring causes pain. The stomach or transverse colon has been known to enter the hernia.

The diagnosis is made from the symptoms and signs of (1) hernia, (2) characteristic pain, (3) vomiting, (4) absence of disease of the stomach and gall-bladder. Hernia of the linea alba is not a medical curiosity and must be looked for in every case of abdominal distress. It occurs with sufficient frequency to be reckoned with as a factor in differential diagnosis in many diseases of the stomach and gall-bladder and as a factor in the treatment of all nutritional diseases or conditions in which malnutrition is a factor. It may produce symptoms resembling those of cholelithiasis. It may actually cause hyperacidity and such pain on taking food as to give rise to a suspicion of ulcer of the stomach. It may actually produce ectacy of the stomach and even obstruction of the bowel. Failing in all this, it may still produce so much irritation as to form the basis of a neurasthenia or other neuropathy. The pain is seldom constant and is usually caused by anything that produces tugging upon the omentum, as vomiting, peristalsis of the stomach, enlargement of the stomach by food or drink and movement of the stomach by the diaphragm in coughing, distention of the colon by gas and feces, diarrhea and other conditions increasing the peristalsis in the intestines and the tension of the abdominal muscles. Of the more common tests of the source of pain, the drinking of cold, aerated liquids, rapidly followed in a few seconds by marked distress, is the most characteristic. Inflation of the stomach with a Seidlitz powder is not so reliable, as other conditions may produce pain. Vomiting occurs in a few cases, in which the patient has learned that relief is gained,

but the act is usually voluntary. Analysis of the vomited matter or the examination of a test breakfast gives a variety of findings. In many cases there has been found an increase in the secretion of hydrochloric acid, probably due to irritation by vomiting or increased stimulation of the splanchnic plexus by the hernia. Normal stomach secretion is more frequent. The exclusion of disease of the stomach and gall-bladder is often difficult. The pain and method of production is similar to that of perigastric adhesions, due either to ulcer or cholecystitis.

No treatment is necessary unless pain is present, except in the rare conditions of obstruction or hernia of the stomach or colon. Closure of the hernia is the only possible treatment for the relief of pain. In the operation care must be taken not to mistake the tumor of preperitoneal fat for the sac and adherent omentum. Many cases are reported of absolute cure by surgical means in the German literature and by D. D. Stewart, of Philadelphia, in *American Medicine*.

CRAWFORD COUNTY.

The Crawford County Medical Society met in regular session at the office of Dr. C. Barlow, in Robinson, May 10, 1906, with President Dunham in the chair. There were present sixteen members and two visitors, as follows: Drs. C. E. Price, C. Barlow, T. N. Rafferty, J. E. Midgett, C. H. Voorheiss, J. W. Kirk, H. N. Rafferty, I. L. Firebaugh, H. F. Jones, Dolph Conover, L. R. Illyes, J. A. Ikemire, A. G. Meserve, J. N. Mitchell, E. M. Cooley, Frank Dunham, C. R. Burner and R. D. Johnson.

The minutes of the previous meeting were approved as read. Dr. Robert D. Johnson, of West York, was nominated as a candidate for membership, and on motion the rules were temporarily suspended, and Dr. Johnson was elected a member of the society.

Dr. C. Barlow presented the subject of Consultations, showing by the narration of two instances the difference between a modern consultation and one which occurred many years ago. The subject was thoroughly discussed, the consensus of opinion being that consultations, when conducted in good faith, should be of immense good to both patient and practitioner, and were not held as often as should be the case. Dr. H. N. Rafferty read a paper on Problems in Appendicitis, which had been prepared for the state society meeting.

In the matter of business the delegate to the coming meeting of the state society was instructed to vote for the establishment of a medical defense fund. Dr. E. M. Cooley was elected as alternate to the same meeting.

The agreement regarding old-line life insurance examinations, which was recently signed by nearly all of the reputable physicians of the county, was officially indorsed by the unanimous vote of the society. The committee on arrangements for the coming meeting of the Æsculapian Society, to be held in this city May 31, made a preliminary report through its chairman, Dr. H. N. Rafferty, which report was accepted and the committee continued. On motion the society adjourned.

H. N. RAFFERTY, *Official Reporter*.

FOX RIVER VALLEY MEDICAL ASSOCIATION.

The eighty-second semi-annual meeting of the Fox River Valley Medical Association was held at Elgin, April 25, ten days earlier than its regular date (the second Tuesday in May), in order to take advantage of the visit of Dr. McCormack, of the Committee on Organization of the American Medical Association. The president, Dr. Bell, was in the chair, and the meeting was called to order at 10:15 a. m., about sixty members and visiting physicians being present. Among the more important items of business transacted were the adoption of the "Freeport resolutions," commending the *Chicago Tribune* for the unselfish war it is waging against adulterated foods and fraud proprietary and "patent medicines," and the "Pike County resolutions," deprecating the tendency of the insurance companies to cut down the compensation for life insurance examina-

tions and advocating an agreement among the profession to insist upon a fee of \$5.00 in all old-line life insurance examinations not requiring the use of the microscope and \$10.00 where microscopic examination is required. In compliance with the recommendations of the State Board of Health, the following resolutions were adopted:

"WHEREAS, It is becoming a general custom to preserve poultry and game in cold storage for an indefinite period and then expose it for sale without removing the entrails, thereby fostering rapid decomposition and the formation of ptomaines highly deleterious to the health of the consumer; and

"WHEREAS, The wholesomeness of such poultry and game requires that it be bled and drawn when killed; therefore be it

"Resolved, That we hereby express our unqualified disapproval of this practice and urge the city councils and village boards in Kane and McHenry counties to pass ordinances prohibiting the sale of undrawn poultry, game and fish in said towns; it is further

"Resolved, That a copy of these resolutions be forwarded to the various newspapers, city councils and village boards of said counties."

A committee, consisting of Drs. Jenks, Gahagan and Tobin, of Elgin, and Drs. McDonald and Franz, of Aurora, was appointed to confer with the committee from the Children's Hospital Society, of Chicago, in the matter of inducing the State of Illinois to establish a colony for epileptics. Another committee, consisting of Drs. Gahagan, Bridge, Nason, Achard and Allen, was appointed to confer with a like committee from the Aux Plaines Branch of the Chicago Medical Society in regard to holding a joint meeting at Wheaton, in DuPage County.

Dr. C. M. Johnson, of Harvard, Ill., then read a paper on Trauma of the Liver and Surrounding Viscera.

TRAUMA OF THE LIVER AND THE SURROUNDING VISCERA.

C. M. JOHNSON,

HARVARD.

When requested to read a paper on Trauma of the Liver and Surrounding Viscera before this society, I accepted the task with pleasure, as I had so recently had under my care such an interesting case, which fitted the subject exactly; but when I came to look up statistics on the subject my heart failed me. Careful reading of the works of our prominent neighboring operators—Ochsner, Senn, Murphy, Van Hook and others—revealed that very little had been written on this interesting subject that will bear any close relation to the case which I wish to present to you. On the afternoon of July 11, 1905, I was called to see Mr. B. C., whom I found to be suffering intense pain over the entire abdominal region. The patient had been thrown to the ground by a blow from the wooden sweep of a ditching machine, which struck him in the right hypochondriac and epigastric regions. He was rendered completely helpless from the blow, and the only position which he could endure was on his knees in a half-sitting position, with the body flexed. In this position he was brought in a wagon to his home in Harvard, a distance of five miles. On examination I found a patient aged 40 years, height 6 feet 2 inches, weight 165 pounds; his face was bronzed from exposure, hair brown, eyes blue; history of previous good health and no specific trouble.

I found him in bed in the position described above. The pain was general throughout the abdominal region, but was most intense in the epigastric region. Temperature, 98.7; pulse, 120; peritoneal face well developed. He was already tympanic, pupils dilated, skin cold and clammy. Patient vomited bile and continued to retch long after the stomach was apparently empty. As the thirst was intense, I gave normal salt enemata in pint doses every six hours; morphin gr. $\frac{1}{4}$, atropin gr. $\frac{1}{200}$, was given at intervals during the night with but little effect on the pain. Another careful examination of the patient at 3 a.m., the 15th, revealed considerable dullness in lower abdomen when patient was held in

upright position, with diminution in force of pulse and an increase in rapidity, showing with the other usual symptoms that the patient was having hemorrhage from some source. Increased tympanites, increased epigastric pain, with no external sign of injury, not even discoloration of the skin.

No change occurring in his condition, I advised his removal to the hospital, which was done. Upon arrival he was immediately prepared for operation. The anesthetic was administered with the patient still in the upright position, gradually taking the recumbent position as the ether took effect. The entire abdomen was scrubbed with sterile water and green soap, then with ether, alcohol and bichlorid solution, and the alcohol sponges applied to the abdomen. Examination on the table revealed nothing new. At 9 a. m. I opened the abdomen in the median line, making a four-inch incision, commencing about one inch below the ensiform cartilage. On opening the peritoneum blood and clots welled up through the opening. Hurriedly removing the clots and sponging carefully, I found a tear in the free border of the right lobe of the liver, one and one-half inches long, from which active bleeding was still in progress; this was probably increased by manipulating the parts. After packing the tear in the liver temporarily to check hemorrhage, an examination of the other abdominal viscera was made, showing a tear of the same length in the transverse colon and a tear two inches long in the omentum. Closed wound in the colon with Lembert sutures and closed omentum with mattress suture. Removed temporary packing from liver and replaced with yellow gauze, bringing the ends out of the lower end of the wound. Placed rubber drainage tubes, one running downward to the omental tear and the other toward the wound of the liver, bringing both out of the lower angle of the wound. Closed wound with the usual layer suturing; applied gauze dressing with the usual adhesive straps and binder. Patient stood operation well, and on being carried to room his temperature was 98.6, pulse 84. He was placed in bed with the shoulders slightly raised and the knees flexed. No nausea from anesthetic. Highest temperature during the first twenty-four hours was 100.4, pulse 92. Every hour or two the patient had paroxysms of pain, lasting from five to ten minutes, and so severe at night that a hypodermic of morphin, gr. $\frac{1}{8}$, was administered, which relieved the pain. Just previous to this, patient had vomited about an ounce of greenish-yellow fluid.

As in all abdominal cases, the nourishment was given per rectum, giving never more than six ounces and finding that the highly concentrated foods in four-ounce enemata answer the purpose much better. (These enemata are repeated every four hours unless contraindicated.) Enemata were discontinued after the fourth day, and an ounce of bouillon every hour substituted.

July 17 the drainage gauze was found to be perfectly dry on the surface of the wound, though thoroughly impregnated with bloody serum previously discharged. I removed two pieces of this gauze, and on the 21st removed the entire drain, which was replaced by a rubber drainage tube, which was carefully cleansed at each dressing and replaced. On the 21st some of the stay sutures were removed, and at this time the temperature was normal and the pulse 98. On the 23d the discharge was lighter and thinner, and on the day following the remaining stay sutures were removed. On July 26 the discharge was creamy and seemed to irritate the skin, which became very painful. On the 28th the discharge was carefully examined and found to be almost entirely pancreatic fluid, which was digesting the skin. Hot boric-acid dressing was applied and changed every two hours. As in all such cases, the patient was treated on the expectant plan, fearing the wound was of the thoracic duct or some of its branches, which experience has shown never heal. On the other hand, we were hoping it would prove to be of the pancreas. At this point the most discouraging feature of the case arrived; the patient refused to eat, saying the burning in his throat made it impossible to do so. That was quickly remedied, but still he did not eat. On being closely questioned by the nurse in charge, he admitted that he felt too weak to make the effort. From that time he was fed for days, and only by persistent effort was he induced to take the amount of food considered necessary to sustain his strength. On the 28th his temperature rose to 100.8, pulse

106. In three days his temperature dropped to 100, pulse 90. After August 5 the temperature and pulse were practically normal. Patient discharged August 17 from the hospital, though he continued to come at intervals for two weeks to have the wound dressed. Then the discharge suddenly ceased and patient resumed his regular work. At first he walked with the body slightly flexed, but gradually resumed his natural upright position. For ten days previous to his discharge he was wheeled into the open air daily and remained there for at least four hours. Under this treatment he gained so rapidly that he was soon eating enough for two men, a habit he was still keeping up at the last accounts.

The points I wish to bring out in this paper are the almost immediate improvement of the patient as soon as the abdomen was opened, the absence of sutures of the liver, the least possible manipulation of the parts at the operation, the necessity for rectal feeding, and, perhaps most important of all, drainage and the position in bed after operation.

The second case is that Mr. N., aged 54 years, a Swede, farmer, living fourteen miles from Harvard, Ill. About 1 p.m., Feb. 12, 1905, this man was shot through the abdomen, chest, arms and legs by a shotgun loaded with No. 4 shot at a range of five yards. When shot he was standing in the brush, out of sight of his son, who shot directly at him as a bird flew up from the ground. This accounts for the large area covered by the shot. He was taken to Woodstock and the attending physician saw at once that he was in a serious condition and advised his removal to the Harvard Hospital. On account of late trains he did not reach the hospital until 6:30 p.m. When admitted, hemorrhage was still active and patient was so exsanguinated that the doctors present decided he was too nearly dead to warrant surgical interference. Pressure bandage stopped hemorrhage of left arm. He was placed in bed in an upright position, the only way he was able to breathe. Normal salt enemata were given every three hours during the night. Normal salt transfusion was used in breasts and right thigh. Hypodermics of morphia, gr. $\frac{1}{4}$, and strychnia, gr. $\frac{1}{30}$. No radial pulse at the time of admission, but pulse soon returned after use of normal salt, though very irregular in character. We were led to believe that shot had penetrated the chest, as the patient raised light, frothy blood, and several days later dark blotches in the phlegm. We also diagnosed puncture of the stomach from three shot, as he vomited blood and passed blood in the stools later on. The wounds from three shot over the liver discharged bile for a short time. He was kept perfectly quiet and normal salt enemata administered as above described, and at 5:30 the following morning the temperature had risen to 99.5 and the pulse 106, though still irregular, gradually increasing in strength. Nutritive enemata were given every four hours. He complained constantly of choking sensation and shortness of breath. Wounds were dressed with normal salt solution and frequently wet. On the 14th he was allowed to take small sips of water and had no discomfort. In the evening of the same day he was given the albumin of egg by mouth and the nutritive enema changed to every six hours. The temperature rose to 100.4, pulse dropped to 82. On the 16th he was given beef juice and beef tea by mouth. At this time the temperature was normal and the pulse was 64. As pain and swelling left the wounds they were dressed with balsam of Peru and oil. As the case improved so rapidly, we decided to let well enough alone, and, after removing all the shot on the surface that seemed in danger of suppurating, patient was allowed to return home as soon as sufficiently strong, and has never had any further trouble. I wish you to note this case, as so many have terminated differently which have been operated for a like serious condition.

Although every one was much interested in the doctor's paper, the discussion was deferred until some future time in order that Dr. McCormack's speech might begin at the hour named in the invitations to the laity, who by this time were rapidly filling the house and eventually left not a single vacant seat. Dr. McCormack spoke for an hour and a half and held the interest and attention of his audience till the last moment. Most medical men throughout the state

are now familiar with the gist of his remarks. It was an eloquent and convincing plea for acquaintance, good fellowship, mutual helpfulness and organization on the part of the medical profession, and the exercise of common sense and a willingness to profit by the advances of medical science on the part of the public. After adjournment of the business session all the visiting doctors were invited to remain as guests of the society at the banquet, a feature of the meeting which is always greatly enjoyed.

GEORGE F. ALLEN, Secretary-Treasurer.

IROQUOIS-FORD MEDICAL SOCIETY.

The ninth regular meeting of the Bi-County (Iroquois-Ford) Medical Society, held at Gilman, Ill., on Tuesday, June 5, 1906, was an unqualified success. Never before in the history of the society has a meeting held at this time of year, when so many physicians are away on vacations, been so largely attended, and never before has the interest manifested by members in the proceedings been so general or so great. A local committee met all incoming trains and escorted visiting physicians to the Gilman House, where an excellent dinner was served at the expense of the Gilman fraternity, who proved themselves most hospitable hosts. Appetites satisfied, all repaired to the Odd Fellows Hall. President D. W. Miller called the meeting to order. The minutes were read by Secretary Robert Lumley and approved. Everything was then ready for new business.

The resignation of Treasurer C. O. Burgess was read and accepted, after which the president appointed Dr. Horace Gibson, of Sheldon, to fill out the unexpired term. It was then moved, seconded and unanimously carried that the secretary be authorized to order suitably printed blanks, on which to give receipts to members when they pay their dues, said blanks to show from and to what date payment has been made. It was then moved, seconded and carried that henceforth no member of this society shall make an examination for any old-line life insurance company for less than \$5.00 nor for fraternal life insurance organizations for less than \$3.00. After considerable discussion it was moved by A. J. Newell, seconded by R. Lumley, that the last resolution be reconsidered. Carried. It was finally amended that the minimum fee for "old-line" companies shall be \$5.00 and for "fraternals" shall be \$1.00. Carried.

The president then appointed R. Lumley, S. D. Culbertson and A. J. Newell as a committee to draft suitable resolutions regarding the death of Dr. D. L. Jewett and report as soon as possible. The following are the resolutions presented, which were unanimously adopted by the society:

"WHEREAS, Death has taken from us one of the organizers of this society and its first president, our much-esteemed colleague, the late D. L. Jewett, M.D., of Watseka, Ill.; and

"WHEREAS, The deceased was one who, throughout his long and honorable career, at all times reflected honor upon our profession; who, with true courage and patriotism, served our country in her hour of need, even as surgeon on the field in the fatal fight at Gettysburg, and one whose sincere and heart-felt sympathy with suffering made him the friend as well as physician of all his patients; and

"WHEREAS, He was at all times an ardent, consistent and conscientious advocate of the ethics of our profession in the relations of physicians with both the public and each other; and

"WHEREAS, The affection and esteem in which he was held by all who knew him have done much to exalt our profession, increase its influence, and the confidence and respect with which physicians are regarded in this community; be it, therefore,

"Resolved, That this society deplores the decease of our late colleague, D. L. Jewett, M.D., with sincere sorrow; that we lament his loss as a calamity to the community and irreparable to our society; and be it further

"Resolved, That one copy of these resolutions be sent to the bereaved widow, that another be inscribed upon the records of this society, and that yet others be sent to *The Journal of the American Medical Association*, *THE ILLINOIS MEDICAL JOURNAL*, the *Watseka Republican and Times-Democrat*, the *Paxton Record*, the *Loda Register and Times*, and the *Piper City Panhandle-Advocate*, respectively, for publication.

A. J. Newell, of Onarga, then read the following:

"Resolved, That the constitution and by-laws be so amended as to include what follows: 'Every member of this society shall in future be assessed \$1.00 annually, to be paid with the regular dues, for the purpose of establishing a medical defense fund, as has been suggested by *THE ILLINOIS MEDICAL JOURNAL*.'"

It was then moved, seconded and carried that the secretary be authorized to order 100 copies each of the constitution and by-laws and the code of ethics, and have printed thereon the places and dates of meetings of this society.

The following papers were then read:

Diabetes Mellitus, by T. N. Boue, M.D., of Loda. Dr. Boue's papers are always as good as intelligence, experience and research can make them. Unfortunately for the critic, however, nothing is left for him to say but to pronounce a eulogy, which, however sincere it may be, must seem flattering. This was no exception.

Renal Calculus, by Dr. Horace Gibson, of Sheldon, was a scholarly review of the subject, which left nothing to be added. He is another hard man for the critic to follow. Nothing is left but laudation and reiteration, which soon seem stale.

Eyestrain and the Importance of Its Recognition and Treatment, by Dr. C. W. Geiger, of Kankakee, was an exhaustive résumé of the nervous and mental complications which often result from uncorrected ocular lesions. Unfortunately, however, the business session took up so much time that the hour was too late for any of the papers to receive the thorough discussion that they merited.

ROBERT LUMLEY, M.D., Secretary.

JASPER COUNTY.

The Jasper County Medical Society held its regular meeting at Newton, June 1, 1906. Upon the recommendation of the society our former secretary, Dr. E. E. Burton, was appointed a member of the city board of health. The doctor is also one of our aldermen. The society adopted a resolution that the hour from 1:30 to 2:30 p. m. on regular meeting days be devoted to a free dispensary clinic, to treat free all worthy charity cases presenting themselves at that time. Discussion by members on Cerebrospinal Meningitis was the subject occupying our attention. Dr. Clagg, of Wheeler, presented a case of necrosis of the tibia. The attendance of members was good and quite an active interest is already displayed by the members, which promises well for the society. Dr. Carl Booker, Newton, was elected as a new member.

J. P. PRIESTLEY, Secretary.

MCLEAN COUNTY.

The May meeting of the McLean County Medical Society was held in the City Hall, Thursday evening, May 3, 1906. The meeting was called to order by the president, Dr. A. L. Fox. The minutes of the last meeting and one special meeting were read and approved. Under reports of committees, Dr. Rhodes reported that the rating book was in the hands of printers. Communications were read from the Pike County Medical Society showing their disapproval of fees of less than \$5.00 for examinations in old-line insurance companies. Ordered placed on file.

Dr. A. L. Fox, in a few well-chosen words, expressed his gratitude to the Society for their support during his term of office and retired in favor of Dr. Bath, the incoming president, who announced the following committees for the

year: Program Committee: Drs. Meyer, Hart, Chapin, Fenelon and J. W. Smith; Entertainment, Drs. Rhoda-Galloway Yolton, H. W. Elder and Dr. Howell; Judiciary, Drs. C. M. Noble, J. E. Covey and F. H. Godfrey; Sanitation, Drs. J. B. Taylor, E. Mammen, R. D. Fox, J. K. P. Hawks, F. C. Vandervort and Edson Hart.

Dr. J. W. Smith gave a synopsis of his paper to be read at the state meeting in the Symposium on Defective Hearing and Vision in the Public Schools. Dr. S. T. Glasford, of Danvers, read a very interesting and practical paper on Infant Feeding. He spoke of difficulties of getting the ordinary family to comprehend the importance of proper food for the infant, this being due largely to the fact that the physician fails to give proper and definite instructions to the mother or nurse; also of the very prevalent tendency to "dope" the child with "soothing syrups" every time it cries rather than regard it as the result of some improper food and treat the condition accordingly. The writer's experience leads him to favor a combination of mother's milk and cow's milk, modified, as more satisfactory than the proprietary foods. Dr. H. W. Elder read a paper on Acute Nephritis in Children. He called attention to the too general indifference of the physician to the gross and minute anatomy of the kidneys, the importance of elimination per bowel and skin in these cases and the value of the hot pack. After discussion of papers, the meeting closed.

T. W. BATH, President.

O. M. RHODES, Secretary.

The June meeting of the McLean County Medical Society was held in the City Hall, June 6, 1906, at 8 o'clock. Meeting called to order by President Bath. Minutes of last regular meeting read and approved. A communication from Dr. Devine acknowledging receipt of contribution to San Francisco physicians was read.

Dr. R. D. Fox made a report on Bloomington's Milk Supply, giving synopsis of method employed in making tests. He reported that formalin was found in specimen of Baird Bros. milk, and that the percentage of butter fat was low.

Prof. J. M. Trueman, of the Dairy Department of the University of Illinois, gave a very interesting address on The City Milk Supplies of Illinois. He called attention to the fact that the value of milk products of the country is in excess of that of all the mineral and oil products combined. The amount consumed per capita is about half a pint per day. The food value of four quarts of milk equals that of three pounds of beefsteak and at only one-half the cost. The reasons why more milk is not used per capita are that the people do not realize its food value and that they are not satisfied with the product. The number of germs per c.c. gives a clue to the manner in which milk has been handled, but there is no fixed bacteriologic standard. Some claim 50,000 bacteria per c.c., at the time that the milk is put on the market, indicates a fairly good condition of milk.

Bloomington's Supply.—Out of 20 samples examined, which ranged from 2 to 4 per cent. butter fat, reactions for formaldehyd were given by samples from Baird Bros. & O'Neil's samples. Hotels and restaurants almost invariably furnish poor milk, it being both low in butter fat and dirty. Out of 101 samples taken, 87 showed dirt. Fifty per cent. of manure is soluble, can never be strained out, and does not show in the dregs.

The remedy for this condition is (1) publicity following inspection; (2) ordinance regulating supply; (3) co-operation of dealers, to help honest dealers; (4) co-operation of consumer; care in the private household is often improper, causing "sweet curdling;" the consumer should demand a good product; (5) pay cost of good milk, probably not less than 7 cents, and see that it is furnished. The problem is to produce clean milk. The speaker called attention to the bulletins issued by the Dairy Department of the State University. A vote of thanks was tendered Professor Trueman by the Society.

Dr. J. K. P. Hawks reported favorably for the censors on the name of Dr. H. B. Perry, of Lexington, and it was voted that the secretary cast the ballot of

the society for Dr. Perry. Dr. Mammen, delegate to the State Society, reported that it was voted to increase state dues \$1.00 per year, making our per capita dues to the State Society \$2.50 each year, instead of \$1.50, as formerly. The extra \$1.00 is to form a state medical defense fund.

Dr. Hawks reported a case of extra-uterine pregnancy with rupture. On operation no radial pulse was discernible. The tube and ovary were removed. Recovery was uneventful.

Mr. Schuhknecht, of the Pure Food Commission, was present and gave an outline of the work undertaken in his department. He said that he should insist on pure milk. He also premised the co-operation of his department.

Meeting adjourned.

T. W. BATH, President.

O. M. RHODES, Secretary.

WILL COUNTY.

The regular meeting of the Will County Medical Society was held April 3, 1906. The program was as follows: Rupture of the Intestine, Dr. Michael E. McGann; Puerperal Pelvic Infection, Dr. Marion K. Bowles; Toxemias of Pregnancy, Dr. Eva McClenahan; Erysipelas, Dr. John P. Benson.

Dr. J. P. Brown, of Plainfield, was elected to membership.

A letter from the Children's Hospital Society of Chicago was read, asking for our co-operation in another attempt to have the state legislature pass a bill for the establishment of a state colony for epileptics in Illinois. Dr. William Dougall, chairman; Dr. R. D. Eldredge and Dr. D. W. Jump constitute the committee to help carry out the plans.

Members present: Drs. Nash, McClenahan, McRoberts, Gilbert, McGann, Dougall, Fisher, Hiemmel, Lennon, F. W. Ruben, Cohenour, Woodruff, Brannon, Bowles, Benson, Eldredge, Cushing, Curtis.

The regular meeting of the Will County Medical Society was held May 8, 1906. The following program was given: A paper on Gastrointestinal Anastomosis, with the McGraw Ligature, Dr. L. Brannon; a paper on Cremation, Dr. A. Nash. A motion was made to the effect that the Will County Medical Society expresses its belief that the only proper disposal of the dead is cremation. It was decided to appoint a committee to co-operate with the Sanitation Society. Dr. John B. Howe, of Peotone, and Dr. John B. Shaw, of Joliet, were elected members of the society.

Members present: Drs. Nash, Brannon, Lennon, Hummel, Dougall, Munch, Woodruff, Cohenour, Gilbert, F. W. Ruben, Bowles.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of June the following members of the Illinois State Medical Association became members of the American Medical Association:

Goodman, Thos. B., Cobden.
 Herriman, W. D., Chicago.
 Binney, R. W., Granite City.
 Barelay, Robt. Donaldson, Cerro Gordo.
 Allen, L. G., Litehfield.
 McBride, W. O., Joliet.
 Scott, W. P., Elliott.
 Midgeley, R. J., Wilmington.
 Bley, Geo., Beardstown.
 Wiley, F. A., Earlville.
 Millhon, Homer Benj., Owaneoo.
 Tischart, P. J., Chicago.

Barr, W. Allen, Chicago.
 Alrutz, L. F., Chicago.
 Converse, W. C., Chicago.
 Seids, John W., Annawa.
 Pavlik, O. S., Chicago.
 Clemensen, Peter Christian, Chicago.
 Lins, F. J., Durand.
 Davis, Ernest E., Avon.
 Gardner, John L., Rochelle.
 Menge, Frederiek, Chicago.
 Whiteaker, Hall, Mound City.

NEWS OF THE STATE

Dr. Yarnell. Galesburg, has located in Wenona.

Dr. Bissell has sold out his practice in Watseka.

Dr. J. S. Mason, of Rantoul, has removed to Urbana.

Dr. A. J. Roe, of Springfield, has removed to Chicago.

Dr. Bleuler, of Carlinville, has been touring the Northwest.

Dr. Snow, of Chadwick, is soon to locate in San Diego, California.

Dr. J. Millard Maury has been appointed city physician for Wheaton.

Dr. and Mrs. Amos F. Conard, Homer, are taking a trip to California.

Dr. Ernest J. Miller, Sycamore, who has been seriously ill, is improving.

Dr. James R. Hull, Good Hope, has started for Seattle en route for Japan.

Dr. J. B. S. Woolford, of Sterling, is enjoying a lengthy trip through the western states.

Dr. H. E. Morrison, for several years a resident of Galesburg, has removed to Freeport.

Dr. Blunt, of Geneseo, was fined \$25 and costs recently, for violating the quarantine law.

Dr. R. Flentje, a graduate of St. Louis University, class of 1906, has located at Illiopolis.

Dr. Robert Bell, a graduate of Washington University, St. Louis, class of 1906, has located at Lebanon.

Dr. B. D. Parrish, of Mattoon, has been appointed physician of the Odd Fellows Home, located in that city.

Drs. Byron C. Stolp, Swartout, and Conley have been appointed members of the Board of Health, of Wilmette.

Dr. Herbert H. Pillinger, formerly of Chicago, has formed a partnership with Dr. F. E. Wallace, of Monmouth.

Dr. George A. Wash, Palmyra, who underwent an operation in St. Louis recently, has returned home convalescent.

At the annual meeting of the American Academy of Medicine in Boston, June 2-4, Dr. Casey A. Wood, Chicago, was elected president.

Dr. S. E. Solly, a pioneer physician of Colorado Springs, Colorado, has been brought to Chicago, being unable to remain longer in the high altitude of Colorado.

The directors of the Chicago Baptist Hospital contemplate the erection of administration offices and an addition to their present building at a cost of about \$10,000.

Dr. J. E. White, of Urbana, has been chosen supreme medical examiner of the Court of Honor, and will soon remove to Springfield, for a residence of at least three years.

Grace Hospital, Chicago, which is located at 167 Sangamon street, corner of Jackson Boulevard, has recently been enlarged to double its former capacity, being now able to care for seventy patients.

A small neighborhood hospital with a capacity of 10 beds is being erected at 264-266 West North Avenue, Chicago, and will be ready to receive patients August 1. It will be under the charge of Dr. Frank H. Booth.

Fifty-two students received the degree of doctor of medicine at the commencement exercises of Rush Medical College, June 13, which were held in Mendel Hall, University of Chicago. Dr. Roswell Park, of Buffalo, delivered the commencement address.

Dr. Phillip F. Gillette, formerly of Elgin, has accepted the position of assistant physician at the State Insane Hospital, at Bartonville, which was offered him on account of his high average made in the civil service examination held last February. Dr. Gillette was formerly on the staff at the Elgin asylum.

The Hull House branch of the Chicago Legal Aid Society, with the assistance of one detective, has secured the conviction of six druggists, accused of selling cocaine illegally, and has started an equal number of prosecutions since March 1, which is said to be more than the entire Chicago police force has accomplished toward suppressing the traffic.

Dr. Effic Lobdell, of Chicago, who recently testified concerning the health conditions at the stock yards, has begun suit in Justice Everett's court against Carl Vogel, of the Schiller building and Mrs. Mary Loeding, 201 Thirty-ninth street, to secure a judgment of \$200 for her services as an expert witness in litigation in which they were parties. The case was continued.

Dr. Groesbeck Walsh, who has been in the United States medical corps, in Panama, will soon return to Chicago and assume the post of senior physician at the Dunning Infirmary, made vacant through the recent death of Dr. Charles E. Swan. Dr. Walsh stood at the head of the eligible list for appointment to the place and has sent his acceptance to the county civil service commission.

The judgment recently rendered against Dr. George W. Webster, President of the State Board of Health, in a suit for illegal malpractice, was set aside May 26, by Judge Wright, on the ground that the plaintiff failed to show any connection between the alleged want of skill and care, and the outcome in the case, which was the loss of the girl's leg. The case will probably be heard by Judge Wright during the present term of court.

The Jenner Medical College, at 106 Washington street, has been made defendant in three suits filed in the superior court, by officers and directors of the school. The suits were for \$551.50, \$3,408.50 and \$1,000, money loaned the college on judgment notes by C. S. Shorman, financial secretary and treasurer, and H. H. Redfield and J. C. Ward, directors. It was said at the office of attorneys for the school that the suits are the results of friction among the directors of the institution.

The Æsculapian Society, of the Wabash Valley, held its fifty-ninth semi-annual meeting at Robinson, Illinois, May 31. This was one of the banner meetings of the society, which is the oldest medical society West of the Allegheny mountains. There was a fair attendance of members and many visitors, the guest of honor being Dr. J. F. Percy, of Galesburg, president of the Illinois State Medical Society. Dr. Herbert H. Rafferty, of Robinson, was elected secretary and treasurer, to fill the vacancy caused by the death of Dr. H. McKennan, of Paris, Illinois, which occurred in March.

At the request of Health Commissioner Whalen, the Chicago city council finance committee, recently granted an emergency appropriation of \$10,000 for the purpose of fighting the epidemic of scarlet fever, which has been sweeping over Chicago. The money will be used to provide additional ambulance service and an outfit for extra disinfectors. In a letter to the committee, Dr. Whalen declared that for the week ending May 26, there were 254 cases of scarlet fever, diphtheria, measles, and other contagious diseases in the city, as compared with 57 cases of a like character for the corresponding week of last year.

A joint meeting of the Fox River Valley Medical Association and of the Aux Plaines district branch of the Chicago Medical Society was held in the Court House, at Wheaton, on Wednesday, June 20, beginning at 10 a. m. The morning session was devoted to the reading of a paper on "Traumata of the Brain," by Dr. J. W. McDonald, of the Fox River Valley Association. Following the morning session dinner was served to all present. The session was resumed at 2 p. m. with a paper on "The Diagnosis of Gastric Carcinoma," by Dr. Ellis K. Kerr, of the Aux Plaines district. The attendance was good and the occasion was greatly enjoyed by all.

Dr. J. C. Corbus, superintendent of the Eastern Hospital for the Insane at Kankakee, has tendered his resignation to the trustees. Dr. Corbus' successor will be chosen as soon as the board can find a man suitable to the members. It is probable that a number of other changes will be made in the personnel of the managing staff of the hospital. Ten applications for the position of superintendent are at present under consideration, but it will probably be at least three weeks before any definite action will be taken. In the meantime, the investigation will be continued, during which every detail of the management of the institution will be gone into and necessary changes will be made in the methods of conducting the hospital.

MARRIAGES.

JOHN P. GRIMES, M.D., to Miss Cora Wells Ritchie, both of Chicago.

ARTHUR H. HARMS, M.D., Sterling, to Miss Alice Ward, of Rock Falls, May 29.

GEORGE F. BLOUGH, M.D., to Miss Anna M. King, both of Camp Grove, May 16.

EDWARD WINFIELD GARDNER, M.D., Literberry, to Miss Mary Machin, of Keokuk, Iowa, May 9.

LOUIS NEILL TATE, M.D., Carthage, to Miss Gertrude Almeda Andrews, of St. Elmo, May 16.

CHARLES F. BRIAN, M.D., Bellmont, and FLORA M. TANQUARIS, M.D., of Albion, at Albion, June 6, 1906.

DEATHS.

HERMAN KIRSCHSTEIN, M.D., one of the oldest German physicians of Chicago, died at his home, April 29, 1906, aged 77.

EDWIN M. McAFFEE, M.D., died in a hospital in Chicago, May 27, from osteosarcoma, after an illness of nearly three years, aged 73.

GEORGE E. WILLARD, M.D., Chicago Medical College, 1874, died at his home in Chicago, June 9, after an illness of seven years, aged 51.

JACOB HOKE, M.D., Chicago Medical College, 1869 one of the oldest medical practitioners in Illinois, died at his home in Cordova, May 28, aged 90.

HENRY H. CHASE, M.D., Chicago Homeopathic College, 1881, died at his home in Rock Island, May 23, from septicemia, due to an operation wound, aged 46.

CHARLES CLIPINGER DAVIS, M.D., Medical College of Ohio, Cincinnati, 1854, died suddenly at his home in Robinson, May 11, from heart disease, aged 56.

ROBERT N. RICKEY, M.D. while despondent on account of ill-health committed suicide by taking morphin, at his home in Gray's Lake, Ill., April 30, aged 55.

THOMAS P. HUDSON, M.D., Eclectic Medical Institute, Cincinnati, 1859, formerly of Streator, died in Maize, Kansas, May 3, after an illness of five years, aged about 60.

CLARK B. PROVINS, M.D., Rush Medical College, Chicago, 1882, a specialist on diseases of the eye and ear, died at his home in Ottawa, June 4, after an illness of three years.

BOERNE BETTMAN, M.D., who has been ill for 12 years with insular multiple sclerosis, died from intercurrent pneumonia, at his home in Chicago, after an illness of five days, May 25, aged 49.

JOHN EUGENE TREMAINE, M.D., Hahnemann Medical College and Hospital, Chicago, 1891, professor of materia medica in his alma mater, died at his home in Chicago, June 7, after an illness of two weeks, aged 37.

VALENTINE VERMILYE, M.D., College of Physicians and Surgeons, in the City of New York, 1844, one of the oldest citizens of Sandwich, died at the home of his daughter in that place, May 7, after a prolonged period of invalidism.

EDWIN FORREST RUSH, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1878, a great-great grandson of Benjamin Rush, died at his home in Chicago, April 21, after a prolonged illness, from chronic nephritis, aged 54.

ISAAC M. NEELY, M.D., (Years of Practice, Illinois), 1887; for many years recorder of vital statistics in the office of the clerk of Cook County; formerly a practitioner of Benton and Du Quoin; for eight years postmaster of the latter town, died at his home in Evanston, June 4, aged 80.

GEORGE LEOLKES, M.D., Hahnemann Medical College, Philadelphia, 1868; of Belleville; a member of the St. Clair County Medical Society and for several years a member of the Belleville Board of Education and library board, died of heart disease, at Mullanphy Hospital, St. Louis, May 15, aged 60.

DANIEL LEE STEWART, M.D., College of Physicians and Surgeons of the City of New York, 1862; member of the American Medical Association, Illinois State Medical Society and Iroquois County Medical Society; a practitioner at Watseka for more than 40 years, died at his home in that place, June 5.

GEORGE W. JOHNSON, M.D., College of Physicians and Surgeons, Chicago, 1895; after his graduation, an interne in Cook County Hospital; for three years a member of the medical staff of the Cook County Institutions, Dunning; a member of the American Medical Association, Illinois State Medical Society and Chicago Medical Society, who was operated on for appendicitis, May 31, died at the Augustana Hospital, June 4, aged 45.

DARWIN D. EADS, M.D., Jefferson Medical College, Philadelphia, 1859; a botanist of wide repute, whose contributions to the botanical collection of the Smithsonian Institution, Washington, included almost all the flora of the central states; a practitioner of Paris, Kentucky, for more than 40 years, and a member of the Mississippi Valley Medical Association, died suddenly at the home of his son, in Chicago, May 27, from angina pectoris, aged 70.

PHILIP H. BARTON, M.D., College of Physicians and Surgeons of the City of New York, 1864; a member of the American Medical Association; the oldest practitioner of Danville; assistant surgeon of the gunboat *Shamrock* during the Civil War; for many years local surgeon for the Wabash Railway Company and chief examining surgeon of the pension department under the Cleveland administration, died at his home in Danville, May 29, from cerebrospinal hemorrhage, after an illness of three weeks, aged 71.

NEW MEMBERS OF ILLINOIS STATE MEDICAL SOCIETY.

During the months of May and June the following new members have been added to the Illinois State Medical Society:

ADAMS COUNTY.

Becker, H. E., Quincy.
Kyerman, M. C., Quincy.

CHRISTIAN COUNTY.

Newkirk, H. N., Owaneeco.
Short, W. T., Stonington.
Soliday, M. H., Owaneeco.
Turner, A. F., Taylorville.

COOK COUNTY.

Bryant, Sara A.
Bozineh, M. F.
Breakstone, Benjamin H.
Brydges, J. Charles.
Buckley, J. E.
Burr, Albert H.
Caspian, Pashal G.
Code, William E.
Damiana, J.
Davis, Carl B.
Davis, David J.
Doyle, Thos.
Findlay, E. K.
Fonser, C. G.
Gardner, George A.
Gillmore, Emma W.
Gialloretti, Vincenzo.
Gino, Vincent.
Grimes, John P.
Grove, James M.
Hager, Daniel S.
Hanson, Joseph.
Harrison, C. W.
Hayden, Austin A.
Hayner, Jennie E.
Hopkins, C. W.
Janss, Edwin.
Jentsch, Ernest.
Jones, C. D.
Jordan, Edwin O.
Lorch, George J.
McGrory, M. J.
Meyer, Edward F.
Mitchell, Harriet D.
Nauman, O. W.
Neilson, N. N. J.
O'Connor, James L.
Oyen, Henry M.
Pearson, Louis M.
Piekerill, J. Thomas.
Poorman, C. W.
Post, Wilber E.
Quist, F. Julius.
Ross, J. B.
Runte, Janet E.
Sandy, Thomas H.
Schrayer, W. S.
Schwandt, E. J.
Shapiro, H. B.
Thorpe, John N.
Warren, Emma J.
Warren, Homer S.
Wedelstaedt, Bismark von
Weisenburg, Berthold.
West, John C.

DOUGLAS COUNTY.

Colyer, W. A., Garrett.
Polk, J. L., Arcola.
Fuller, G. H., Tuseola.
Rutherford, Cyrus, Newman.

GALLATIN COUNTY.

Harrell, J. C., Omaha.
Johnson, W. T., Ridgeway.

GRUNDY COUNTY.

Palmer, F. A., Morris.

JACKSON COUNTY.

Roth, H. H., Oraville.

KANKAKEE COUNTY.

Lewis, J. V., Momence.
Kenega, A. S., Kankakee.

McLEAN COUNTY.

Johnson, L. N., Arrowsmith.
Perry, A. B., Lexington.

MACON COUNTY.

Keech, R. K., Decatur.
Pope, Roy, Niantie.

MONTGOMERY COUNTY.

Sihler, G. A., Litchfield.

PERRY COUNTY.

Layman, S. J., Tamaroa.

PRATT COUNTY.

Lockwood, C. R., Atwood.
McClain, B. T., Atwood.

PIKE COUNTY.

Thurman, F. M., Pearl.

SCOTT COUNTY.

Peters, L. P., Merritt.
Evans, C. A., Bluffs.

SHELBY COUNTY.

Sparling, W. H., Moweaqua.

UNION COUNTY.

Lence, J. J., Jonesboro.

VERMILION COUNTY.

Brobeck, A. L., Hoopeston.

WHITE COUNTY.

Boyer, J. A., Carmi.
Ellis, Walter L., Grayville.
Leslie, J. P., Grayville.
Allen, W. A., Epworth.
Long, Felix, Enfield.
McClay, A. I., Delavan.
Sibley, Frank C., Carmi.
Parker, V. H., Carmi.
Lehman, J. H., Carmi.
Boyer, J. A., Carmi.
Hopkins, J. N., Burnt Prairie.
Wakeford, Chas., Norris City.
Puntney, C. W., School.
Murphy, J. C., Brownsville.

WOODFORD COUNTY.

Millard, Homer A., Minonk.

ILLINOIS STATE MEDICAL SOCIETY

SECTION OFFICERS AND COMMITTEES.

SECTION ONE.

C. W. Lillie, E. St. Louis, Chairman
 Ralph W. Webster, 100 State St., Chicago, . .
 Secretary

SECTION TWO.

E. H. Ochsner, 710 Sedgwick, St., Chicago, . .
 Chairman
 H. W. Chapman, White Hall, Secretary

COMMITTEE ON PUBLIC POLICY.

Carl E. Black, Jacksonville.
 J. W. Pettit, Ottawa.
 The President and Secretary, ex-officio.

COMMITTEE ON MEDICAL LEGISLATION.

L. C. Taylor, Springfield.
 M. S. Marcy, Peoria.
 J. B. Fowler, Chicago.
 The President and Secretary, ex-officio.

COMMITTEE ON MEDICAL EDUCATION.

Frank P. Norbury, Jacksonville.
 J. F. Percy, Galesburg.
 C. L. Mix, Chicago.

COMMITTEE ON SCIENTIFIC WORK.

The Section Officers.
 The President and Secretary.

COUNTY SOCIETIES.

This list is corrected in accordance with the best information obtainable at the date of going to press. County secretaries are requested to notify THE JOURNAL of any changes or errors.

Adams—George E. Rosenthal, Quincy.
 Alexander—J. T. Walsh, Cairo.
 Bond—J. C. Wilson, Greenville.
 Boone—R. B. Andrews, Belvidere.
 Brown—F. E. McGann, Mt. Sterling.
 Bureau—O. J. Flint, Princeton.
 Calhoun—Stephen Flatt, Hardin.
 Carroll—H. S. Metcalf, Mt. Carroll.
 Cass—J. A. McGee, Virginia.
 Chicago Medical Society—F. X. Walls,
 Chicago.
 Champaign—C. D. Gulick, Urbana.
 Christian—
 Clark—L. J. Wier, Marshall.
 Clay—C. E. Duncan, Flora.
 Clinton—C. H. McMahan, Carle.
 Coles—O. M. Ferguson, Mattoon.
 Crawford—H. N. Rafferty, Robinson.
 Cumberland—W. R. Rhodes, Toledo.
 De Kalb—C. H. Mordoff, Genoa.
 DeWitt—A. E. Campbell, Clinton.
 Douglas—Walter C. Blaine, Tuscola.
 Du Page—Affiliated with Cook County.
 Edgar—C. S. Laughlin, Paris.
 Edwards—J. H. Lacey, Albion.
 Effingham—C. F. Burkhardt, Watson.
 Fayette—A. L. T. Williams, Vandalia.
 Franklin—W. H. Smith, Benton.
 Fulton—D. S. Ray, Cuba.
 Gallatin—J. W. Bowling, Shawneetown.
 Greene—H. A. Chapin, Whitehall.
 Grundy—H. M. Ferguson, Morris.
 Hamilton—G. N. Lyons, McLeansboro.
 Hancock—R. L. Casburn, Carthage.
 Hardin—R. H. Willingham, Elizabethtown.
 Henderson—Ralph Graham, Biggsville.
 Henry—H. W. Waterous, Galva.
 Iroquois—Ford—Robt. Lumley, Watseka.
 Jackson—W. C. Hill, Murphysboro.
 Jasper—James P. Prestly, Newton.
 Jefferson—J. T. Whitlock, Mt. Vernon.
 Jersey—H. R. Bohannon, Jerseyville.
 Jo Davless—D. G. Smith, Elizabeth.
 Johnson—T. E. McCall, Vienna.
 Kane-McHenry—G. S. Allen, Aurora.
 Kankakee—J. A. Brown, Kankakee.
 Kendall—R. A. McClelland, Yorkville.
 Knox—G. S. Bower, Galesburg.
 Lake—A. C. Haven, Lake Forest.
 La Salle—W. A. Pike, Ottawa.
 Lawrence—J. B. Bryant, Lawrenceville.
 Lee—S. W. Lehman, Dixon.
 Livingston—John Ross, Pontiac.

Logan—H. S. Oyler, Lincoln.
 McDonough—J. B. Bacon, Macomb.
 McHenry—See Kane and McHenry Coun-
 ties.
 McLean—O. M. Rhodes, Bloomington.
 Macon (Decatur Medical Society)—W. C.
 Bowers, Decatur.
 Macoupin—J. Palmer Mathews, Carlinville.
 Madison—F. C. Joesting, Alton.
 Marion—E. E. Fyke, Centralia.
 Marshall—J. A. Swem, Henry.
 Mason—H. H. Hanly, Havana.
 Massac—R. H. Jacobs, Metropolis.
 Menard—B. H. Hole, Tallula.
 Mercer—V. A. McClanahan, Viola.
 Monroe—Elbert J. Lee, Jr., Valmeyer.
 Montgomery—G. A. Clotfelter, Hillsboro.
 Morgan—David W. Reid, Jacksonville.
 Moultrie—F. P. Zerfass, Sullivan.
 Ogle—W. K. Farley, Oregon.
 Peoria City Medical Society—F. K. Sidley,
 Peoria.
 Perry—J. W. Smith, Pinckneyville.
 Platt—B. L. Barker, White Heath.
 Pike—R. H. Main, Barry.
 Pope—W. A. Sim, Golconda.
 Pulaski—A. W. Tarr, Grand Chain.
 Putnam—R. G. Dakin, Magnolia.
 Randolph—A. D. Steele, Chester.
 Richland—A. T. Telford, Olney.
 Rock Island—Ralph Dart, Rock Island.
 St. Clair—James W. Twitcheell, Belleville.
 Saline—J. R. Baker, Harrisburg.
 Sangamon—C. R. Spicer, Springfield.
 Schuyler—W. F. Harvey, Rushville.
 Scott—J. P. Campbell, Winchester.
 Shelby—C. L. Smith, Shelbyville.
 Stark—M. T. Ward, Toulon.
 Stephenson—K. F. Snyder, Freeport.
 Tazewell—C. G. Muehlmann, Pekin.
 Union—H. J. Lyerly, Jonesboro.
 Vermillion—E. E. Clark, Danville.
 Wabash—G. C. Kingsbury, Mt. Carmel.
 Warren—Henry S. Zimmerman, Cameron.
 Washington—D. S. Neer—Beaucoup.
 Wayne—J. P. Walters, Fairfield.
 Whiteside—C. M. Frye, Rock Falls.
 White—M. L. Ellis, Grayville.
 Will—M. K. Bowles, Joliet.
 Williamson—D. D. Hartwell, Marion.
 Winnebago—W. E. Park, Rockford.
 Woodford—Joseph I. Knoblauch, Metamora.

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VOL. X

SPRINGFIELD, ILL., August, 1906

No. 2

ORIGINAL ARTICLES

SOME OF THE PROBLEMS OF THE INTERNIST WHICH CONCERN THE SURGEON.*

J. F. PERCY, M.D.

President Illinois State Medical Society.

GALESBURG.

The reason for this paper is the invitation of your worthy chairman, who wrote me, in part, as follows: "I am sure that at times the surgeon sees and observes things in the medical man which he would be glad of an opportunity to criticise." Let me hasten to say that I am not here as a critic, at least not as a destructive censor of the doings of that greater part of our medical body known as internal medicine men. No one appreciates better than I the force of the ancient saying that individuals living in glass houses "should dress in the dark." We all have our difficulties. This is no less true when the internist is forced, as he often is, to consider the question of the surgeon and his claims. Fundamentally, we will, I am sure, agree that most of the difficulties which come in to prevent the internist and surgeon from seeing the viewpoint of the other are due, in the main, to individual temperament. It is these temperamental peculiarities in the individual, be he internist or surgeon, which, after all, form the basis of our problems. Combine with our peculiarities the results of our environment, the general education of the individual concerned, together with his medical experience, and, I ask again, is it strange that the difficulties which we have in seeing the point of view of the other should result in problems?

Every earthly question, in its final consideration, is an individual one. This is pre-eminently true of the physician in his professional activities. No other profession, at least to the same degree, is both the judge and executive of its own thought. This being true, then, in no other position in life are the consequences of our actions, if based on insufficient reasoning, likely to be so dire. Any discussion, therefore, as to the relative relationship of individuals in the medical profession to each other must be based on premises which we, as a body, alone can

* Read before the Section on Medicine, Illinois State Medical Society, Springfield, May 15-17, 1906.

understand. The great public rarely judge us on grounds that we recognize as reasonable. Too often our greatest reputation for doing good comes from circumstances which, if placed before a jury of our fellows, could not but bring condemnation. On the other hand, too frequently our best work is apparently lost on this self-same public, simply because they have no means of judging us as we should be judged. And so when we come together in the consultation room, or in our society meetings, we leave that part of ourselves which has been thinking and working alone, using only such part as will help us measure ourselves by the stature which we see in our fellows. Some one has recognized this by saying that we should "strive for the applause of the profession rather than that of the rabble." But in doing this we must recognize, before all else, certain fundamental factors which enter into every physician's life. The first is that we are not endowed with the same mental perspective. Some physicians develop early along certain desirable lines; others, again, are slow in gaining this recognition from their fellows, because of traits of mind and heart which, unfortunately, hold them back. And when these traits are so pronounced as to prevent a given physician from ever being recognized by his fellows, how great the misfortune for all concerned! With so much for an introduction, mainly because I wanted my point of view at least charitably understood, I enter on my task.

One of the problems of the medical profession to-day is the recent graduate who wants to do surgery. An equally important problem is the graduate of fifteen to thirty years ago who does not believe in surgery except as a last resort. The chief ambition of the recent graduate of my day was to do obstetrics and treat the diseases incident thereto. Good work was finally to obtain for him, as its reward, a reputation which would bring him money and a better reputation. The average graduate of to-day is looking to surgery as the most available means for immediate fame. The average older practitioner, whose medical horizon as to the possibilities of good surgery has not been greatly widened since leaving college, sees in these efforts of the youthful surgeon only the confirmation of his opinion that the surgery of to-day, after all, has no more to offer than it did in the days of his first medical observations. Unfortunately, there is a large number of both classes of these men in nearly every community, and they are doing more to prevent the real advance of our profession, as a whole, than any other class. The explanation is that they both lack the same thing, viz., a wider experience.

There are too many men going into surgery as soon as they leave the medical school. I met one of them a few years ago. He had had his diploma just two weeks. He was an average graduate of a medical school with a good reputation. This young man had not prepared himself specially for anything but good average work. He had not had the training of the average hospital interne, he had not served as assistant to a real surgeon, he had not gotten up his surgical technic by animal experimentation, he knew nothing of the practical application of asepsis or even of antiseptics, neither had he learned in the great school of gen-

eral practice; yet this doctor, who was just two weeks out of the opera chairs of his medical school, announced to me that he was ready to cut anything. And he did. Circumstances favored him so that he got surgical cases, and for a year or two he was literally doing surgery. Is he doing surgery to-day? No! Surgery has done him! He is in a position now where he has to commence all over again, if he wants to be a surgeon. But he probably never will. If the actual results of this man's work, while he was attempting to practice surgery, could be known, it would be a record heart rending in the extreme. Some of you may say that he was a fool. No, he was not. If I thought he were, I would not have made him a part of this paper. Neither would I have mentioned this case if it were an isolated or uncommon one. But what I have just described is being enacted in scores of places not only in this state, but in every one of our states. If human life and human suffering count for anything, as they do, then this is a condition of affairs that, to put it mildly, is unfortunate for the most desirable and truest advance of both internal medicine and surgery.

The explanation of this legalized assassin's opportunities for carrying on his ignorantly based work is twofold: First, the present-day medical school, and, second, the internal medicine man. First, as to the medical school. I can best say what I believe should be said by describing a lecture heard within the year delivered to the senior class of a leading medical school in one of our largest cities. The subject of the lecture was the operations on the stomach. Practically all of the possible operations on this viscus were described as found in the ordinary and average text-book to-day. No attempt was made, in the lecture, to furnish guides as to the best operation to select in a given case of disease of the stomach. Not one word as to its dangers, and the pity of it all was that these young men were left with the impression that operations on the stomach were easy. I might say that this is also one of the grievous faults of our modern text-books and even of many of our modern surgical authorities. The surgeon and the surgical writer forget too often that what is easy for him, after a ripe surgical experience, may be a veritable Waterloo when attempted by the novice. But, second, these errors of the teachers and the text-books, in this particular, could not do the harm that is being done to medicine to-day were it not for the laxity of the general medicine man, who is neglecting to diagnose certain very common surgical diseases, and, with it, failing to know what real surgery can do and is doing for their cure. In a community this failure on the part of a man who, because of the excellence of his previous work along general medical lines has earned for him a good reputation, is most lamentable. It gives the illy-prepared surgeon the opportunity he covets, and which he would not have had if his medical competitor had not depended too much on the symptoms and their relief from within the confines of his medical case.

The ancient relationship between medicine and surgery has been temporarily severed. In the old days the internal medicine man made the diagnosis, decided what the treatment was to be, and if, in a given

case, surgery was necessary, notified a surgeon that he might arrange to perform it. In this day what do we see? The average practitioner of internal medicine is not making the diagnosis where the stomach, liver, gall bladder, pancreas, and intestines, including the appendix, are involved. I believe that the future will show that 50 per cent. of the cases having symptoms referable to the stomach can not be benefited by a resort to the knife. The remaining 50 per cent. need the surgeon, usually need him badly, because the internist, into whose care they first came, failed to make a diagnosis. The success of the master surgeons in this latter class is throwing nearly all the diseases of the alimentary tract, at the present time, into the care of the surgeon. The real surgeon culls the cases which he has learned will be benefited by his art, with the result that an equal number, which under a well-informed attempt at diagnosis would and should be benefited by the internist, are left to drift. It is this great class who, thinking that they have tried all that internal medicine has to offer, too often take up the various fads, religious and otherwise, finally to end in the care of the untrained surgeon.

Too many internal medicine men still talk about dyspepsia and colitis, forgetting that the liver or gall bladder, an ulcer of the stomach or the duodenum, or a chronic appendicitis may give rise to these symptoms. Too many internal medicine men are still prescribing for symptoms, forgetting that a symptom of a disease is not the disease itself; that a symptom, like the bark of a dog, merely tells us that there is such a thing as a dog in the neighborhood. Too many internal medicine men are still using agents in the treatment of the symptoms of diseases of the abdomen which are not only inert and, therefore, useless, but harmful, mainly because of the delay which their use occasions. This could be well illustrated by some very interesting cases did space not forbid. Suffice it to say that in this day the internist is leaving the diagnosis and the consequent correct treatment of too many of his cases to the surgeon, thus reversing, I repeat, what was true in former days. We no longer hear anything of a serious nature as to what constitutes the correct treatment of appendicitis. Both the internist and the surgeon now agree on what, in the immediate past, often provoked heated, if not acrimonious, discussions. This stage has not yet arrived as to the diseases of the abdomen, especially its upper part; but, when it does, it will have back of it the impressive lesson of the surgery of the appendix.

In consultation recently with an internist, I was struck with the remark which he made, viz., that he would give half of what he was worth to be able to diagnose gastric ulcer and to differentiate it from the conditions with which it is often mixed. I told him, and I tell you, that every physician can have, and should have, in mind, when the symptoms in his patient point to the stomach or intestines, the picture of which gastric ulcer is most frequently the chief factor. This knowledge is not difficult to acquire. Every physician who sees many office patients has among them each day from one to four stomach cases, whether he recognizes them or not. To-day it is the most common condition with which we are confronted for treatment. When you begin to look for ulcer, you will

find it, and you will find at the same time that it is the open door to a gradually acquired knowledge that will permit of the diagnosis of all the common and uncommon lesions of the abdomen, and especially of the upper part of that intensely interesting cavity. After once being acquired, it is really a comparatively simple subject. Each case, as its symptoms are revealed, will almost unconsciously, in the mind of the examiner, drop into its proper class, and the treatment other than surgical is simple, and the results correspondingly gratifying.

It may be said, in passing, that at the present time this subject is treated in a more comprehensive way in medical journal literature than in the text-books. The varying descriptive power of the authors of journal articles, as a rule, gives one the different points of view necessary to get the foundation for a correct understanding of a subject, the fundamental part of which has already gone into the physician's education. It is rather surprising that no one has attempted to arrange a simple working text-book on the diseases of the stomach, instead of giving us the bulky and ponderous tomes so often padded with the rejected and ancient stuff that was once valuable in a way and in its day.

But I have digressed somewhat from my subject, and, in order to get back to it, I will just touch on a portion of it that is an ever-present one with every surgeon. I refer to the cases needing surgery almost from the beginning of their illness; but which are usually, after an unfortunate length of time, loaded on a stretcher, put in a spring wagon and accompanied often by an important contingent of the citizenship of the town, carried to the depot, thrust into a baggage car and rushed to the nearest hospital. When the latter is reached, the surgeon, who has been notified by telephone or telegraph that a case for immediate operation is on the way, finds (and sometimes to his sorrow) a patient in whom the golden opportunity for good results has been sinned away. The surgeon then finds himself, on the one hand, between a desperately sick patient, who with his friends expect some results from surgery, and, on the other hand, the reputation of the physician, who is responsible, many times, for the delay. If the operation is performed and the patient dies, as is the rule in this class of imperative surgical cases, the reputation of the family physician must be safeguarded at all hazards. But what of the reputation of the surgeon? Has he not also the right of protection as far as it can be honestly given by the practitioner who referred the case? This is a simple proposition and would seem imperatively to require but one answer. But, to my utter chagrin and disappointment, I know of surgeons who have had to shoulder the onus of the whole unfortunate affair; while the practitioner, who was mainly responsible, stood from under. I have seen whole communities, after an experience like this, steal away—unlike the traditional Arab, not silently, but loudly—from a surgeon whose previous record for good work for years in that community had been of the best. The interesting part of it is that the majority of these practitioners are not unmindful in their intentions of the other fellow's reputation, even in a case like this. It is fully explained by what I referred to in the first part of this paper, viz., lack of experience in dealing under pressure with grave difficulties. The cases that do not

belong to the acute emergency class from the very first, in other words, the chronic cases who are allowed to become desperately sick and have to be brought to a hospital on a stretcher, are an evidence, i. e., the stretcher is the evidence too many times, that some one has made a diagnosis that was too late in the making. If this is not the explanation, then it is worse, in that the proper treatment has been withheld, with only a vain hope that something less than surgery would suffice. Most of these cases, too, belong to the abdominal class, for which I am pleading that the internist make an earlier and more rational diagnosis.

In addition to doing this, the internist should also be familiar with what surgery has to offer in the way of treatment where internal medication is producing only temporizing results. The failure to do this, on the part of many general practitioners, is the explanation of the more or less chaotic condition in the practice of medicine in many localities. It will account for the skepticism in medicine, as to the probability of doing anything of permanent value in a large number of cases. With this mental attitude present, the physician stops trying, except in a perfunctory sort of way, until finally the patient slips away to some hospital and, if fortunate in finding a real surgeon, he is relieved or cured of his ills. I say this rather positively because, as before stated, the real surgeon usually knows, after examining the patient, what he can do. My plea is that the family physician should also have known and in this way obtained that which is pre-eminently his right, viz., to have divided the honors with the surgeon.

Many general practitioners seem to be acting on the assumption that surgery has already usurped the whole field of medical practice. It never can, and from the very nature of disease and diseased processes never will. Surgery has a glitter that will always be attractive to every thinking mind. Part of this is due to the fact that the cases in which it is applicable are comparatively rare. In an office where a large number of patients are seen each day, experience has shown that of every twelve examined but one will prove to be a subject for the knife. When this is fully realized, it will stop the rush on the part of so many, especially of the younger medical men, into surgery, because of the apparent, but not real, tendency of medical practice to-day to go that way. It has always been true, and it always will be true, that surgeons are born and not made. The wonderful art of the schools can make a man look like a surgeon for a time, perhaps; but in the light of the years he can maintain that right only by proving it.

To-day, with all the very apparent progress in surgery, if one will but notice, there are only a few real surgeons. There are only a limited number of names in any country that by common consent stand for and deserve the name of surgeon. There are no more genuine surgeons to-day, according to population, than there were fifty or one hundred years ago. At that time each state had a very few men who, by common consent, were recognized both by the profession and the public as surgeons. This is still true, and probably will remain true for at least many generations of men. In spite of this, with the advent of antisepsis which made surgery look so easy, hundreds rushed in where previously even

angels feared to tread. But the profession and the public of to-day are slowly learning, as the profession and the public learned in the years immediately following the advent of anesthetics, that power to operate without pain on the part of the patient did not prevent the common sequel of operations in the days preceding anesthetics. Freedom from pain did not prevent deaths from shock, from sepsis, and from bad surgical judgment. All of which holds true to-day, with the addition that, in these latter days, to the freedom from operative pain has been added, in many instances, the freedom from sepsis. But it takes more than an anesthetized patient whose wounds are to heal without infection to demonstrate that the operator has a born right to the name of surgeon. Without good surgical judgment, no man can be a surgeon in the best sense of that word, no matter what his education, his opportunities, his experience, or his location.

To-day the pendulum is swinging back to where it was years ago, when the South had its Sims and McDowell, the East its Mott and Gross, and the West its Brainard and Gunn. With the increase of population have come more surgeons. In our state, Prince of Jacksonville and Byrd of Quincy have left reputations which, from every standpoint, made them worthy compeers of any of their day and generation. As the general practitioner made the surgeon in the old days, so in this he must still stand sponsor for him. While internal medicine must know its possibilities and learn its limitations, it must at the same time also learn the possibilities and limitations of surgery; if it does not do this, then it will fail to achieve what would otherwise be possible for it to do in the largest measure.

DISCUSSION.

Dr. N. S. Davis, of Chicago:—There is no question about there being a field in which we, as internists and as surgeons, meet the same problems, and where we are confronted constantly with the question whether the individual patient is in need of surgical treatment only, or of medical treatment pure and simple. Very frequently that question is one which cannot be answered with absolute positiveness, largely because of our ignorance of existing conditions.

This problem is one that we meet often in cases of appendicitis. We all know that very many cases of appendicitis recover; make lasting and permanent recoveries without operation. We also know that a certain proportion of cases, if not operated on, are almost sure to terminate fatally, because an operation was not advised. It is impossible for us, as clinicians, to say to which class of cases the individual case belongs. I have seen cases of appendicitis, as many of you have, that were doing extremely well, in which the acute symptoms had passed, when suddenly perforation occurred, and fatal symptoms appeared, without warning. As these mistakes are likely to occur at any time, I feel that we cannot do justice to our patients without urging or recommending surgical treatment. If, as is frequently the case, the patient or his relatives object to surgical intervention, I have no hesitation in attempting to do all I can by medicinal treatment, feeling that, in the majority of cases, the patient will get along nicely under this treatment alone; yet I am always conscious of the misfortune we may meet with, in postponing or neglecting operation.

The trouble is that we are not able to determine the pathologic condition of the appendix as it is indicated by the clinical symptoms. We are unable to make a suitable classification of these cases, to say positively which case belongs to the surgeon and which case belongs to the medical man. We are able to locate the conditions anatomically, but we cannot determine the pathologic condition of the appendix. The same thing is true in the majority of diseases in which both the surgeon and the internist are interested, where they meet on a middle ground, and where they must determine what kind of treatment the individual should be given, whether surgical or medical. Of course, it is only a matter of a very short time when our knowledge of these things will be greater and we will be able to say what kind of treatment should be given the patient. Then there will be many more cases treated medically than are so treated at the present time, that is, cases that are common ground now for the medical man and the surgeon.

Dr. Arthur Dean Bevan, of Chicago:—There are a few points in connection with this paper on which I wish to speak. First, in regard to the young medical man who is attempting to do surgical work. I always felt that the best solution of this problem is found in demanding a hospital training for our young medical men. As a matter of fact, the dental graduate enters on his actual work of practice very much better prepared to do his work than does the young medical man, because the latter is without any training which fits him to meet the conditions as he must find them. The young dentist actually does a lot of clinical work before he graduates; that is not true of the medical man, unless he has served a hospital internship. I firmly believe that the time is coming in this country, as it has already come in Germany, when, before a man can graduate in medicine and take an examination which will entitle him to practice, he will be compelled to take at least one year in a hospital, serving as an assistant under some good man. That is the solution of the problem.

I do not believe that Dr. Percy is right when he says that surgeons are born, not made. He is in error. It is only necessary to cite the fact that Billroth filled almost every large surgical clinic in Germany and Austria with his students, which proves that it is the master who makes the man. The students of Billroth were not born surgeons, but they were made surgeons by being brought to see surgical work done by a master. That is the way in which this question will have to be solved in this country. Our young men must have the opportunity of working under masters in surgery. In the evolution of medicine as a whole in this country there are bound to be lines which divide the practitioners into specialists. The known facts of medicine are not so many but that they can be grasped and arranged systematically by any well equipped brain.

I do not agree at all with the idea that there must be only a few surgeons. I think the medical man of the future, as was expressed recently by Dr. McBurney, will be a well-qualified internist who can operate. It will be well enough in large communities like Chicago and New York, or towns of two or three hundred thousand population, to have the medical men divided into groups, that is, to have specialists, but in the ordinary practice throughout the United States, in cities of ten or twenty thousand population, the best doctor is the general practitioner, the man who can treat typhoid and appendicitis, pneumonia and empyema, the man who can cover the ground formerly covered by the old-fashioned country

doctor, and who is also qualified to operate. These men do better work in handling a given thousand cases than would be done under the same conditions by ten different specialists. They make fewer mistakes and do less unnecessary work. They will be the medical men of the future.

Dr. E. J. Brown, of Decatur:—I agree with Dr. Bevan that a surgeon is not necessarily born. As a rule, he is made. The best thing, however, that ever can happen to the practitioner of medicine is to find his limitations. We all know that an immense lot of surgery, and very poor surgery at that, is being done everywhere, even by men of good reputations, and I think that when every man reaches the point where he can decide in what particular field he can do the best work, he will have reached the happiest moment of his life.

Dr. L. C. Taylor, of Springfield:—I wish to take exception to one idea advanced by Dr. Percy, and if I have misunderstood him, I would be very glad to have him correct me. I understood him to say that the diagnosis of diseases of the stomach, especially gastric ulcer, could be made on certain lines and with comparative ease. I must differ from him in that regard. I know of no disease that we are called on to treat in which we are inclined to be more in doubt than we are in the differential diagnosis of incipient affections of the stomach. That remark does not apply to the general practitioner at all, but to men who have made diseases of the stomach a specialty. When these men will make a diagnosis of carcinoma of the stomach, when the real condition is one of diverticulum of the esophagus some six or eight inches removed from the stomach; when good surgeons will perform a gastroenterostomy in cases of cardiospasm, we must confess that even the best men find a great deal of difficulty in correctly diagnosing diseases of the stomach. A few years ago an examination of the contents of the stomach was recognized as being of great value in diagnosing diseases of the stomach, but we know to-day that even such an examination cannot be relied on under all circumstances.

It certainly is of vast importance to arrive at a definite conclusion in the early stages of these diseases, and anything that will assist us in making a diagnosis at such a time must be hailed with delight. I am very pleased to have heard this paper; I have the greatest respect for its author, but if he will give us some of the points in differential diagnosis of some of these conditions, he will confer a greater boon on his medical associates than he will on his patients.

Dr. J. S. Beaudry, of Chicago:—I am convinced that we can develop good surgeons in small places. One of the leading physicians in the city in which I practiced at one time was engaged in general practice. He began to go to Chicago three times a week, and under a competent man began doing general surgery. The result is that he is doing good surgery to-day, his technique is as good as that of any surgeon I know, and his results are the equal of those of competent men, and I have seen many surgical operations in Chicago and elsewhere.

Dr. John P. Roark, of Bushnell:—There are some things in the doctor's paper in which I was interested particularly. In regard to the attitude of the man who graduated fifteen and twenty years ago, with reference to the benefits that may come from surgery, I wish to say that the man who considers nothing but statistics when he operates is likely to get an exaggerated idea of the benefits of surgery. There are some cases, particularly abdominal cases, where it is impossible to know in the beginning whether or not surgical intervention is indicated.

It is this class of cases that is especially in need of the wisdom of the general practitioner. At times, the general practitioner will make the mistake of not sending his patients to the surgeon soon enough; I have made that mistake myself, but I have also made the mistake of sending my patients to the surgeon too soon. Only to-day a patient came back to me after having had a mutilating operation done that probably was not required at all. Often it is a matter of great difficulty for the general practitioner to know when to send his patients away, and to whom to send them. That point was well taken by Dr. Percy. If he sends his patient to a man who will do an operation whether it is needed or not, both he and the patient are likely to lose by the transaction. If the general practitioner does not send his patient to the surgeon soon enough, the patient may lose a limb, or even his life. These are things that will always depend on the judgment of the individual physician. The practice of medicine is a profession. If it were possible to figure out things in that profession as we do the laying out of a stone wall, medicine would be a trade, and not a profession.

Dr. E. R. Larned, of Chicago:—I wish to criticize Dr. Roark, who has given us an imputation on the moral honesty of the men of the state who he says will operate whether or not the patient needs it. I am not a surgeon, and I never expect to be one, but no man has a right to make a statement of that kind without being sure of the facts. There is not a man holding membership in this society who will operate on a patient when it is not necessary.

Dr. C. L. Mix, of Chicago:—Apparently the words internist and general practitioner are synonymous terms, as might be inferred from the discussion, but in reality they are not. The general practitioner devotes his attention to everything, surgical as well as medical. The general practitioner is as much of a surgeon as he is an internist, but the internist is a specialist. I believe the only men in the profession who ever take any interest in the giving of a test meal are the internists. The surgeons certainly do not, or if they do, it is done very impractically. Their idea is to look in and see. It is not a difficult thing to open an abdomen and see what is in it, hence we have these exploratory laparotomies, which are done five to one, five by the surgeon to one advised by the internist. That is undoubtedly the case in many of the larger cities. The internist, as a rule, devotes his energies very thoroughly toward making an absolute diagnosis in the case in hand, and generally he comes pretty near doing it. I believe the internist recognizes ulcer of the stomach far more often than the surgeon does.

I understood Dr. Percy to say that 50 per cent. of the diseases of the stomach are surgical affections. I cannot accept these figures at all. In the first place, I do not believe that ulcer of the stomach is a surgical disease. The vast majority of these cases are easily curable by ordinary dietetic and medicinal measures, the former, of course, preponderating. I do believe that the carcinomatous cases belong to the surgeon, but there is a tendency on the part of the best surgeons to have as little to do with these cases of carcinoma as they possibly can. One surgeon in Chicago does not take them at all if he can get out of it.

As far as surgical operations on the stomach in chronic gastric catarrh are concerned, I cannot see any excuse for this, but in cases of secondary contraction of the pylorus from healed ulcer, those are strictly surgical cases, and the internist very frequently advises the surgeon of the existence of such a state of affairs instead of having the surgeon advise the internist afterward. As a matter of fact, many cases are helped and not hindered by surgical operations, which are done too frequently, and the criticism that Dr. Percy has made that many rush into surgical operations where they should not is a perfectly justifiable one. I have had cases where the patient had an abdominal operation done, usually for some pelvic affection, where the subsequent nervous condition was absolutely caused by the operation.

I think we have all referred cases to the surgeon where we have regretted the action afterward. The surgeons do not cure everything, and frequently they do not agree with the internist. I sent a case of ovarian cyst to a surgeon who disputed my diagnosis. He operated, however, and found the cyst. Recently I sent another patient to a surgeon with a diagnosis of gallstones. He said the diagnosis probably was wrong, that it was a case of abscessed gall-bladder. He operated and failed to find any pus in the gall-bladder, but the stones were there.

As far as my own experience is concerned, I think that usually the diagnosis is made by the true internist, not by the general practitioner, with a good deal more certainty than it is by the surgeon.

Dr. Brown, of De Kalb:—No man has any right to be a surgeon unless he has been a general practitioner. He bears the same relation to the building as the man who mixes the mortar does to the architect. He can do the work, but he is not competent to make the diagnosis. If you have a case of placenta prævia and call in a surgeon, what does he know about it? It is the general practitioner who is competent to make the diagnosis, and it is the surgeon who is competent to do the surgical work. Many men do surgery who are not surgeons at all. They are bunglers. They have not the necessary tact. The man in the country often performs surgical operations of all kinds just as well as does the specialist in the large city. I believe that the general practitioner of experience is in a very much better position to make a diagnosis than is the specialist surgeon, who looks at the case from one standpoint only, and who sometimes performs operations that never ought to be performed.

Within the last six months I have seen two instances in Chicago where an appendix was removed that was not diseased at all. The general practitioner would not have done this, but if the appendix is diseased, he can remove it just as well as the surgeons in Chicago.

Dr. Percy (closing the discussion):—I appreciate very much the kindness with which this Section has received my paper. I believe, however, that most of the points brought out in the discussion were covered in the paper. The point made by Dr. Bevan that Billroth made surgeons in Europe undoubtedly is true. Volkmann did the same. Some of the best surgery that is being done in Europe to-day is being done by men who served under these masters. Yet the point made in my paper, which I think was missed, was the fact that men go into surgery without any real preparation for it. One of the things I look back to with pleasure in my own work is that I killed dogs before I killed anybody else.

I still maintain that the general practitioner has no right to do surgery. I saw a man remove a mole from the face of a girl, who was dead five months after he cut it out. The man, who, when business is dull, gets a case of appendicitis and says to himself that he might as well cut out the appendix as send the patient to Chicago, may be successful nearly all the time, but once in a while the result of his over-confidence is a tragedy. He will suffer more in his nervous system until he knows that the case is safe than will the man who is doing surgery constantly. When it comes to a death there is no amount of money that anybody will get out of a case that will pay him for what he has lost in the way of prestige or criticism in his community. There are men whose reputation for good judgment has been lost by one case of this kind. It is an interesting fact that the very men who come out of hospitals, and who have good surgical training, who locate in small towns, do not, as a rule, do surgery in that community. I have had experience with many of them, and they have told me that they would not risk the loss of a case in their community because they could not do general practice thereafter.

There is no man who is doing both medicine and surgery who can ever become a great surgeon. I saw a case of appendicitis not long ago operated on by a gen-

eral practitioner. It was only an ordinary case, but it took him four hours to take out the appendix. He was a good doctor, too, but he was itching to do surgical work without being able to do it. Fortunately for him, his patient got well, but he objected when the doctor charged him one hundred dollars. That same patient, if he had gone to Chicago, would have willingly paid, two, three, or even four hundred dollars for the same operation done by a man with a reputation.

A man never learns where he belongs. The point I made in my paper was that the general practitioner should learn enough about surgery and its possible results so as not to make a mistake. When he is qualified to do surgery, there is no harm in his doing it, but, until he is qualified, it is well for him to go slowly.

As to the criticism of my friend, Dr. Taylor, I still maintain that the man who looks for the gastric ulcer will find it. I know that to be as true as I do that blue ointment will cure the itch.

Dr. Mix brought out one thing with reference to acute cases. These acute affections of the stomach are never surgical. But here is the great question of carcinoma. If the surgeon gets these cases early, he can add many months to the life of the individual, but when the diagnosis is made, it is usually only a question of a few weeks before death ensues. It is at a time like this that surgery is brought into disrepute. It is better not to operate in these late stages of carcinoma. But I would rather open fifty abdomens unnecessarily and find only one case of carcinoma of the stomach than not to have opened any abdomens and to have lost that one life. It is a reflection on us to have lost a life that could have been saved, and that would have been saved if we had only taken the proper steps to do it.

THE SIGNIFICANCE OF HYDROCHLORIC ACID VARIATION IN THE STOMACH CONTENTS.

EVERETT J. BROWN, M.D.

DECATUR.

When the new era in the diagnosis of stomach diseases by the analysis of the contents was inaugurated, and it was found that in cancer, free hydrochloric acid was usually absent, it was thought that a sure test for this disease had been found, but it was soon discovered that free hydrochloric acid was occasionally absent in other conditions also, notably chronic gastritis and the rare condition of complete absence of gastric juice now known as achylia gastrica. It was then found that cancer usually showed not only absence of hydrochloric acid, but also the presence of quite large amounts of lactic acid. Here, too, we were to be disappointed, for it was found that there could be an entire absence of free hydrochloric acid with a goodly amount of lactic acid in other conditions not cancerous, especially in aggravated cases of asthenic gastritis with great stagnation of stomach contents. Hence, in the diagnosis of gastric cancer, other evidence in addition to the absence of hydrochloric acid and presence of lactic acid must be forthcoming.

Osler records that in ninety-four cases of cancer of the stomach in which the contents were examined, free hydrochloric acid was absent in

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eighty-four cases; other observers confirm these findings, so that it is safe to affirm that in more than 90 per cent. of cases of gastric cancer there is no free hydrochloric acid found. Therefore, the absence of hydrochloric acid in the stomach contents is an important, but by no means a conclusive, evidence of this disease, as other members of the symptom-complex, such as tumor, age of patient, anemia, pain after eating, hematemesis, lactic acid, etc., must be present.

Einhorn says that over one-half of the cases of stomach diseases which present themselves for treatment show an excess of hydrochloric acid in the stomach contents. He found the index for total acidity to average over 60, and of these more than half showed an index over 80.

The normal per cent. of hydrochloric acid is usually recognized as 0.070 to 0.100 per cent., corresponding to the titration figures, 20 to 30. Some authorities put the percentages somewhat higher, but it is well known that in persons having more than this a majority will show stomach symptoms. Occasionally, persons are found with continuous high acidities for months or years, but without symptoms. Normal total acidity varies from 40 to 60, although occasionally it may reach 100 without producing symptoms.

The amount of hydrochloric acid in the stomach may be increased by massage of the abdomen, both in health and in disease. Hence, the value of that procedure in subacid conditions, such as gastric catarrh, achylia gastrica, etc., and its injurious effects in hyperacid conditions, such as hyperchlorhydria and other hypersecretions.

It is also well known that an entire absence of hydrochloric acid may exist for years with apparent good health. Cabot says: "Hydrochloric acid is a luxury in digestion and by no means a necessity." In achylia gastrica, a condition in which there is neither free hydrochloric acid, pepsin, nor the rennet ferments, no symptoms may exist for years, providing there is no motor insufficiency. Einhorn reports a case in which for years no gastric juice was ever found, yet perfect health existed, the small intestine acting vicariously. One of Ewalds cases gained forty pounds under treatment, yet with no improvement in gastric juice.

For the last two years I have had under observation a case of achylia gastrica in a young farmer, aged 24 years. In six analyses of the stomach contents extending over that period, at no time have I found the slightest trace of free hydrochloric acid; the total acidity has ranged from 4 to 12, and at all times both rennet and pepsin ferments have been absent. His normal weight had been 150 pounds; at the beginning of treatment he had lost fifteen pounds; after ten months' treatment, with large doses of dilute hydrochloric acid, nux vomica and dieting, he gained 33 pounds and continues now in good health.

Cases of gastric neurasthenia will at times show the greatest variation in the free hydrochloric acid index. A young student, under my care in October of last year, showed absence of hydrochloric acid with total acidity of 40; again, in February, no hydrochloric acid, but, on May 1 of this year, the free hydrochloric acid was 35 and total acidity 66.

Graham Chambers has called attention to the relation of hyper-

chlorhydria to the so-called "bilious attacks" and to some forms of eczema, also to gout and muscular rheumatism. In many of these cases an excess of hydrochloric acid is found in the stomach contents. In several cases of severe bilious attacks he induced vomiting with apomorphin, and the analysis of the vomit showed a great excess of free acid. He noticed that many cases of eczema were cured by the same alkaline treatment which is given in acid dyspepsia; also that many cases of gout and muscular rheumatism show hyperacid stomach contents. I recall myself two cases of chronic urticaria, which are free from attacks, while taking rhubarb and soda tablets.

All physicians who do thorough stomach work realize that the greatest difficulty is the differentiation of the gastric neuroses from organic disorders. One of the most frequent errors is the diagnosis of almost every gastric neurosis as a gastric catarrh or chronic gastritis, and at times the differentiation is very difficult. As regards the presence of hydrochloric acid in the stomach, it is common to recognize three varieties of chronic gastritis: (1) An excess of hydrochloric acid, known as acid gastritis; (2) a lessened acidity as the disease progresses (the more common form); (3) a condition in which hydrochloric acid is practically or completely absent. One finding, however, is characteristic of all these forms, viz., mucus in greater or less amounts.

There is no disease of the stomach in which the determination of the amount of hydrochloric acid in the contents is of more importance than in the disease known as hyperchlorhydria or hyperchylia, as Hemmeter calls it. This is the typical neurotic stomach and constitutes the largest proportion of the stomach cases seen by the general practitioner. Although the disease may often be diagnosed by the subjective symptoms, such as pain or burning with empty stomach, which is relieved by eating or by soda, and acid eructations, etc., yet in certain cases it is only by a test meal and analysis that an exact diagnosis may be made. Free HCl index of 40 or over is usually present, although in rare cases it may reach even 60, without symptoms. It is in this disease that the routine use of hydrochloric acid as a remedy has done such harm, but there is no disease where the results of proper treatment are more satisfactory.

In dilatation of the stomach the detection of the amount of free hydrochloric acid is of the greatest importance, for this condition exists in three marked forms: (1) Dilatation with normal acidity; (2) dilatation with subacidity or an acidity; (3) dilatation with hyperacidity. Each form requires a different line of treatment.

It is needless to describe the various tests for hydrochloric acid, as they are found in every text-book, but I wish to speak of the value of urine analysis in the diagnosis of gastrointestinal diseases and refer also to the Sahli desmoid test. As is well known, the urine is most highly acid before meals and least acid or even alkaline after meals. With a lessened hydrochloric acid secretion, the normal reduction of urinary acidity is lessened or fails altogether. With an excess of hydrochloric acid in the stomach, a marked alkalinity occurs in the urine after meals. In hyperacidity, the chlorids are also much diminished in the urine, and

by making a quantitative analysis of the urine by the Purdy centrifuge method much valuable information is obtained, especially, if for one reason or another, the stomach tube can not be used.

A year ago Sahli published a new method for testing the digestive and motor functions of the stomach. It is known as Sahli's desmoid test. In a little rubber bag, about the size of a small pea, is placed methylene blue or iodoform; the bag is tied tightly with thin raw catgut. The desmoid bag is swallowed by the patient, after a large meal, and the urine is examined for methylene blue or the saliva is tested for iodine by means of starch paper and fuming nitric acid. The reaction occurs, in healthy persons, in from six to eight hours. If it occurs later or fails entirely, it points to insufficiency of the stomach. Sahli bases his test on the assumption that raw connective tissue is digested only by the gastric juice and not in the intestines. With hydrochloric acid present, together with its accompanying pepsin, the catgut is well digested and the contents of the bag liberated and the urine or saliva shows the reaction. In conditions of hydrochlorhydria or ulcer of the stomach, the reaction occurs early, and with hypo-acid conditions, such as gastric catarrh, dilatation and achylia, it occurs late or not at all.

This method is still in the experimental stage, and, if it should prove to be of value, it will greatly simplify gastric diagnosis and render the use of the meal and stomach tube less often necessary. In the last number of *The Journal of the American Medical Association*, Einhorn speaks of the new test as unreliable, from the fact that the intestinal juices are also capable of digesting the catgut ligature and thus liberating the reagent.

Although not included in the title of my paper, I thought best to refer here to the therapeutics of hydrochloric acid and, incidentally, to pepsin, as the latter is generally loaded in the same gun with hydrochloric acid in the shotgun prescriptions of many practitioners. Pepsin we now regard as a therapeutic joke. It is absolutely without value in 99 per cent. of the cases in which it is used, and the use of a solution of pepsin containing alcohol is a farce. No other field of therapeutics exhibits so well the simplicity of medical men in allowing the pharmaceutical chemists to educate them on the action and indications for the use of drugs. They accepted the dictum of the commercial traveler that anything which will digest a slice of egg albumin in a test tube will do it equally well in the stomach. Fortunately, however, pepsin is harmless and has its uses as a placebo. Not so with hydrochloric acid, however, the indiscriminate use of which constitutes the "greatest sin of commission" of so many physicians. When we know that nearly 60 per cent. of patients coming to us for treatment for stomach symptoms already have too much of this acid in their stomachs, we realize that this 60 per cent. would be injured or at least not benefited by the use of this drug. We also know that whenever hydrochloric acid is present there is also plenty of pepsin. When rightly administered, however, there is no drug which yields such useful and often even brilliant results as hydrochloric acid. In all conditions of subacidity or anacidity, such as chronic gastritis,

cancer and achylia gastrica, it is indispensable, while it is useless in ulcer, in hyperchlorhydria and in other neuroses.

FLATFOOT AND SYMPTOMATIC ARCHES.*

FRANK B. LUCAS, M.D.

PEORIA.

How great a distress may arise from a seemingly trivial deformity is well exemplified by the condition known as flatfoot or pes planus. In beginning a review of orthopedics, how natural it is to think of the foot, but how seldom anything less than clubfoot is considered of real consequence to the general practitioner. Being a victim, to a considerable degree, of flatfoot deformity, and knowing, from years of experience, the disability and actual pain endured from it, I consider that I may well call your attention to a few things that you may not have given particular attention.

How often have you diagnosed rheumatism or neuralgia of the feet without even removing the shoe, much less the stocking? I fear we have all made the same error many times, and even should the condition present be suggested to our minds, yet it is put off as a thing of small importance and the patient receives a course of salicylate of soda, lithia tablets, or is instructed to bathe the feet nightly in hot water, or to wear a different kind or shape of shoe, etc.

Now, while all static foot troubles are not flatfoot, yet this deformity or arch deviation is in many instances accountable for the disabilities spoken of, and can easily be eliminated as a cause, if examination be made even in such a simple manner as I shall hereafter describe.

The anatomy of the normal foot, with reference to its mechanical construction, will be the first thing to consider. Its osseous structure, as you know, is composed of three sets of bones known as tarsus, metatarsus and phalanges. The tarsus consists of seven bones, viz., astragalus, os calcis or calcaneum, scaphoid, cuboid and internal, middle and external cuneiforms. The metatarsus is composed of five bones, and the phalanges are fourteen in number, the great toe having two and the other toes three each. In addition, there exists two sesamoid bones at the metatarsophalangeal joint on its plantar surface. Of these bones, we may exclude the sesamoids and phalanges for illustrating purposes, as they are adjuvant to the weight-bearing function. The bones of the tarsus and metatarsus are united by ligaments in such a way as to form two distinct arches with their convexities directed upward and being at right angles each to the other.

As suggested by Ellis, the construction and shape of the arched part of the foot may be better understood by considering it as half of the arch formed by the two feet.

These arches are termed the longitudinal and transverse arches and are the vital points in the mechanism of elastic weight bearing. When these arches are intact the astragalus bears a definite relation to the

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underlying calcaneum, also the first and fifth metacarpo-phalangeal articulations bear definite relations to each other and to the inferior surface of the calcaneum, forming three points of an irregular triangle, with its base at the transverse arch and its apex at the heel (Fig. 1. C). There-

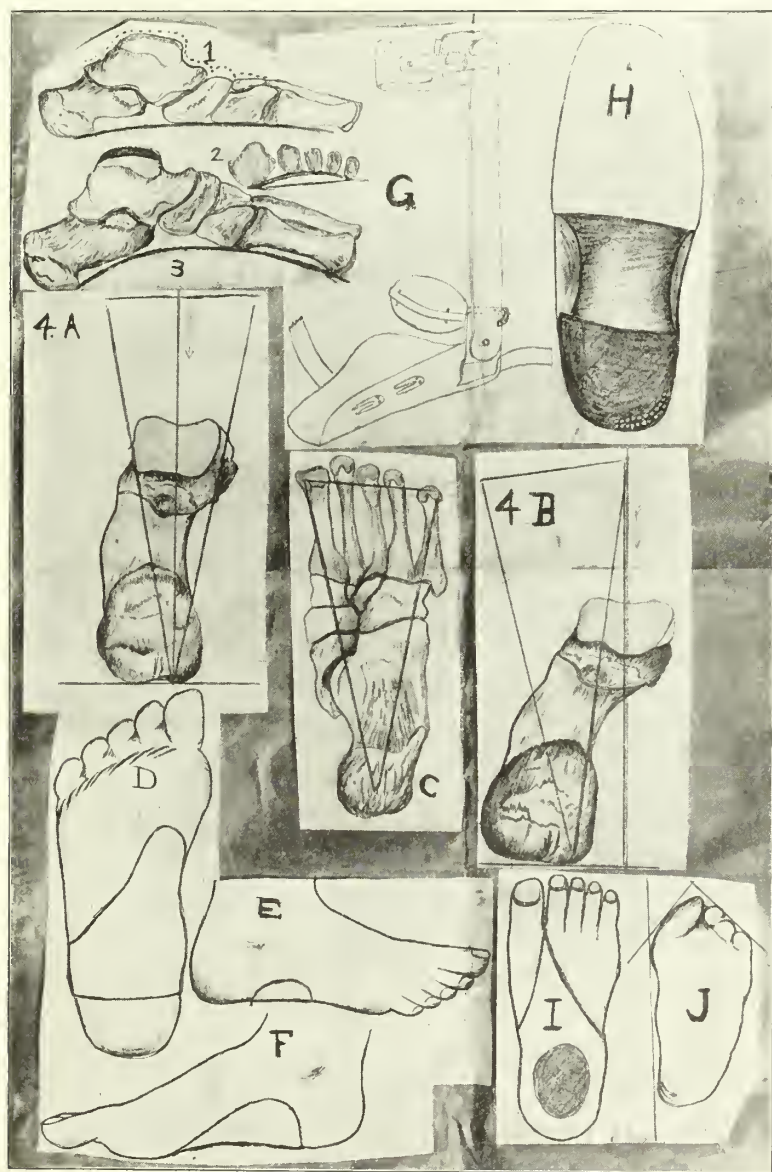


Fig. 1.—1, diagrammatic broken arch. 2, transverse arch (normal). 3, normal arch (longitudinal). 4. A, normal position left os calcis; B, os calcis of pronated foot; C, weight bearing points of triangle; D, E, F, three views of Royal Whitman arch prop; G, paralytic flat foot brace; H, Galloway shoe; I, sandal wearing foot; J, "tooth pick" shoe results.

fore, in standing or walking, the superimposed weight is thrown on these three points, which, if connected by inelastic structures, would not

change in their relations one to another. But it is here that elasticity of structure prevails to the extent of allowing the base of the triangle to spread and to recede from the apex slightly, as the full force of weight bearing is applied. Furthermore, so long as the astragalus maintains its proper relations to the calcaneum, and the foot is directed straight forward so that it is in line with the long axis of the leg, just so long is the weight bearing directed in a line drawn from near the middle of the base of the triangle to its apex, and the impact of the force is diffused throughout, the elastic arches thereby preventing any jar to the superimposed structures, viz., the limbs and body as a unit.

These bony arches are reinforced by ligaments, fascia and muscles, which are now to be considered as briefly as possible for a good understanding of the subject. The reinforcing ligaments are so complex that they may be briefly described in groups, viz., interosseous and plantar, and, as detail would be tedious, it may be said that they are so attached between the bones as to bind the arches in place, much as the arch in a bridge span is held by the network of rods and braces between the fixed masonry of the piers. The most important ligaments concerned are the inferior calcaneo-scapoid and the calcaneo-astragaloid, the latter doing more to keep the keystone (astragalus) of the arch in place than does its fellows. The muscles concerned are those generally occupying the plantar portion of the foot, and, in addition, the tibialis posticus and peroneus longus, all the muscles acting to flex the toes and assist in preserving the longitudinal arch, while the transversus pedis assists in maintaining the transverse arch in position during rest.

The action of the peroneus longus, as described by Morris, is, in part: "By drawing backward and outward the base of the first metatarsal bone it tends to render more concave the antero-posterior (longitudinal) and transverse arches of the foot. In the former action it assists the tibialis posticus." According to the same author, the action of the tibialis posticus is "to support the longitudinal arch of the foot, first, by drawing backward the lower part of the scaphoid and so preventing the descent of the head of the astragalus between the scaphoid and calcaneum, and, second, by its traction on the other tarsal bones on which the secondary offsets of its tendon are inserted."

The plantar fascia is a dense fibrous sheet arising from the under, outer and inner surface of the calcaneum and is attached to the various structures, bony and ligamentous, about the transverse arch, forming a strong aid to the other structures mentioned. The sole is protected from jar by thick pads of fat encased between fibrils of connective tissue running from the plantar fasciæ to the skin, these latter fibrils serving two purposes, first, to keep the mesh of fatty pads in place and, second, to prevent the dense skin of the sole from moving to any great degree on its underlying structures. These pads are thicker over the three points of pressure mentioned above. The innervation and blood supply of the foot will not be considered, as only the anatomy, from a mechanical standpoint, is necessary to an understanding of the altered conditions present in flatfoot and other arch deviations.

Flatfoot is a deformity characterized by marked pronation of the foot, with obliteration of its longitudinal arch, and is accompanied by abduction of the forefoot or front part of the foot (Fig. 4). The weakened foot is often the forerunner of flatfoot and is that kind of a foot which habitually assumes a faulty position of eversion and abduction of its fore part under weight bearing, with some prominence of the inner malleolus.

Within certain limits the normal foot under weight bearing assumes this position to a degree, but beyond a certain limit the direction of weight bearing continued in the direction of the long axis of the leg



Fig. 2.—Upper illustration, high French heel; lower illustration, relative position of foot in such shoe, showing tendency to shorten tendo-Achilles.

passes through the astragalus and to the inner side of the inner border of the heel, and inward rotation of the arch structures results with breaking down of the arch itself (Fig. 1, 4 A and B).

The action of the leg and thigh assists this materially, viz., when the weight of the entire body is thrown on the limb, the foot being planted firmly on the ground, the whole limb rotates inward from the hip, the inner malleolus makes an excursion inward, downward and backward, and the foot rolls to the inner side, as described above. When the muscles

and ligaments opposed to this rotation, become inefficient from any cause, then the deformed condition results.

Dane, in *Orthopedic Transactions* of 1897, has well described the conditions in his conclusions, which I shall here quote: 1. In pronation of the foot, the greater part of the foot remains stationary and the leg rotates on it. 2. In addition to the generally recognized motion of the malleoli inward and slightly downward, the normal outward rotation of the tibia and fibula is replaced by an exaggerated rotation inward which takes place about a nearly vertical axis located near the inner border of the tibia. 3. These changes, acting together, produce an alteration in the obliquity of the axis of flexion of the ankle joints sufficient to destroy the mechanism by which the normal joints are enabled to support the body weight, with a minimum of muscular exertion. As a consequence, flexion must be prevented and equilibrium maintained wholly by muscular force, which soon leads to irritation and fatigue of all the muscles of the lower leg, and especially of the peroneus longus. 4. This inversed rotation of the tibia interferes to a great extent with the operation of the mechanism by which complete extension of the knee should lock the joint and render it proof against the constant tendency of the body weight to flex it. The knee must, therefore, in subjects with pronated feet, be kept in extension by a constant exercise of muscular force, which results in the fatigue and tendency to tonic spasms of the muscles of the thigh. This is shown, also, by the extreme tenderness often found over the point of insertion of the internal hamstring muscles on the inner tuberosity of the tibia. 5. Owing to the constant attempt of the muscles on the outer side of the thigh to prevent the internal rotation of the lower part of the leg, they are commonly found to be tense and sensitive to pressure. 6. To try and compensate for this inversed rotation of the tibia and fibula, there is an exaggerated inward rotation of the femur. This, in its turn, overstretches the external rotators of the hip, as shown by sensitiveness to pressure and tonic spasms of the glutei and tenderness over the points of exit of the sacral nerves. 7. This explanation is wholly in accord with the clinical fact that when we have, by means of efficient mechanical support, prevented the "pronation of the foot," we have relieved the pains in the calf, knee and hip.

Flatfoot may be congenital or acquired. As a congenital condition, it is not so very rare. Kustner reported 13 cases in 150 new-born children (8.6 per cent.) in which the condition was marked. Adams found 42 cases among 764 cases of congenital deformities of the feet. Of these latter cases, 15 were of the right, 10 of the left and 17 of both feet. The anatomic characteristics of congenital flatfoot do not differ from the acquired and show marked pronation and inversion of the foot relative to the long axis of the leg. This is further illustrated by the fact that the bones show but little alteration in shape, as is the case in adult flatfoot.

Rigid flatfoot is a condition in which the astragalus is dislocated inward until it has slipped off the os calcis and the os calcis is itself tipped inward, and the forefoot forms an obtuse angle with the tarsal portion, being fixed in this position by adhesions and changes in the ligamentous

structures. This variety, while appearing of poor promise, is yet not difficult of correction under anesthesia and suitable manipulation combined with operative procedures on the tendo-Achilles (Fig. 4).

Flexible flatfoot. E. H. Bradford (*Am. Journal of Orthopedic Surgery*), in an article entitled "A Consideration of Flexible Flatfoot," calls attention to this, as a variety, in contradistinction to rigid flatfoot, and defines the difference in treatment. Flexible flatfoot deviating in arch conditions from normal is, of course, much more amenable to plate correction than are rigid feet. As to the paralytic, traumatic or other forms of flatfoot, they differ only in the plan of corrective procedure, mechanical measures being adaptable, with slight variations, to the particular case.

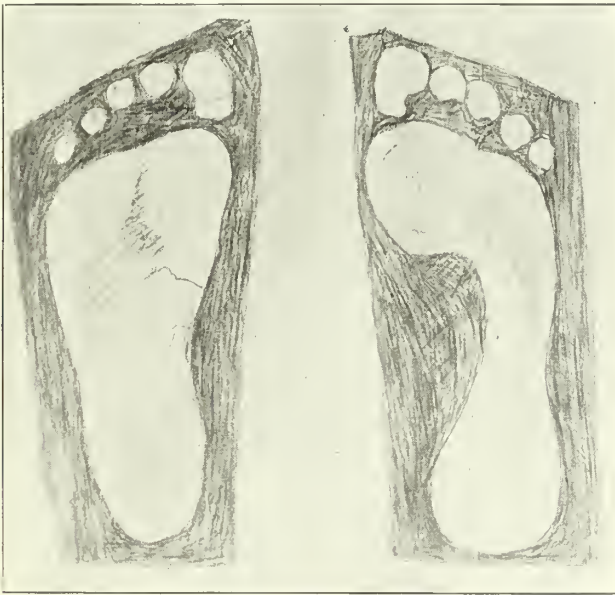


Fig. 3.—1, flatfoot imprint; 2, normal imprint.

ETIOLOGY.

Bradford and Lovett give the following: 1. Boots of improper shape. 2. Weakness or insufficiency of the muscles resulting from (a) long standing, especially on hardwood floors; (b) rapid growth; (c) poor health or muscular debility; (d) convalescence from acute illness; (e) accident or injury causing disuse of limb and subsequent muscular weakness. 3. Excessive strain, as in the case of professional strong men and jumpers. 4. A shortened condition of the gastrocnemius muscle, as described by Schaffer. Unless dorsal flexion of the foot beyond a right angle is possible, it is impossible for a person to complete the step with the leg straight behind him and the foot pointing forward; eversion of the foot is necessary, and a completion of the step by rolling over on the inner side of the foot. This tends to produce pronation habit and breaking

down of the arch. 5. Rickets, mostly observed among children. 6. Infantile paralysis. 7. Direct traumatism. 8. Locomotor ataxia and similar organic nervous diseases. 9. Gonorrheal rheumatism. 10. Rheumatoid arthritis.

Considering improper footwear as a cause, what was the probable condition present in aboriginal people who wore no shoes whatever? Investigation shows planus to be a rare condition among the Indians of North America, who live out of doors, hunt on foot, and have no more restriction to natural foot action than that of easy-fitting, soft-soled moccasins, which allow exercise of the sole muscles in flexion and also call on the peroneus longus and tibialis posticus to do service actively in maintaining the arch. An examination of the ancient records of Egypt and other countries where sandals were commonly worn shows particularly the freedom allowed the toes. I have reproduced the drawings to illustrate this (Fig. 1). The thongs passing between the toes do not prevent full extension and the flexible sole permits of a moderate degree of plantar flexion. The latitude of abduction allowed the great toe and smaller toes is worthy of note.

In children previous to the shoe-wearing period, the flexibility of the forefoot is a marked contrast to the shoe-wearing adults in this direction. Babies can, and do, go through a gymnastic exhibition with the toes and forefoot that simulates that of the hand, and it only requires training to perfect them in grasping objects with the toes, much in the same manner that the fingers are so used. In fact, the Japanese acrobat displays remarkable dexterity in this regard by the great flexor strength of his forefoot (Fig. 5).

Dr. Phil Hoffman, of St. Louis, took advantage of the World's Fair in that city to examine critically the feet of those aborigines known as the Central African and pigmy groups furnished by the Philippine exhibit. In a very complete article in the *American Journal of Orthopedic Surgery*, October, 1905, he shows, by many photographs and drawings, the positions in standing barefoot and in using the feet to climb and grasp objects, etc., and also the effect of shoes on these feet, all tending to confirm the views expressed above. He found absolutely no symptoms referable to arch deviation, regardless of the type of arch among these barefooted people.

What does the average modern shoe do to impair flexor function? In the first place, it binds the toes closely together, often displacing the great toe toward the middle line and by compressing from the outer side crowds the small toe and its mates toward the middle line into a position directly opposite to that observed in the infant (Fig. 1 J). This faulty position, found usually at puberty, has occurred gradually as the shoe has changed according to the degree of fashion. The sole of the shoe is often rigid and, especially at its anterior portion, the arch is too narrow transversely and the shank or heel-encompassing part is too flexible; add to this an elevated narrow heel, ready to topple to either side, as the mechanical conditions present may determine and the effect is complete.

The constricting modern shoe, therefore, is a causative factor in that

it prevents or removes the necessity of active flexion of the forefoot in walking, producing thereby a weakening of the musculature, which is so essential to the maintainance of the natural arch, as well as placing beneath the calcaneum an insecure prop for the heel.

When we consider weakness of the muscles concerned, from the various causes assigned, we can also say that they are often predisposing causes and that the improperly shaped shoe is an exciting cause. The shortened gastrocnemius, rickets, infantile palsies, rheumatism and other causes given could not act, if proper treatment had been commenced early, when



Fig. 4.—Severe congenital flatfoot.

the deformity was in its incipency and continued until as full correction as possible had been obtained, and then preserved by a proper shoe.

As to the changes of anatomic relations in the bony structures of the arch, we may consider them under pathologic anatomy.

PATHOLOGIC ANATOMY.

As has been said, little change occurs in individual bones in congenital flatfoot, even of marked degree, and the same can be said of acquired flatfoot in all except the severe cases, approaching the rigid type. The

astragalus is turned obliquely to one side and downward, the end (heel) of the os calcis may be raised slightly, the scaphoid is rotated on its central axis, its outer border becoming more prominent, while its inner border is depressed, the bones of the front foot all rotate on the valgus and are abducted. This is the position of the foot at rest, and it is exaggerated during weight bearing (Fig. 6). The astragalus is the key to the arch, and, having no muscular attachment, its position depends on the ligaments binding it in place and also on the peroneus longus and tibialis posticus and thus on the integrity of those bones with which it articulates, particularly the scaphoid. In very severe cases of acquired flatfoot, slight bony changes may occur. The external malleolus may be somewhat flattened and rounded and the scaphoid may suffer extreme dislocation and an osseous deposit may prevent the normal play between scaphoid and astragalus. The shoe worn by a flatfoot patient tells its own tale (Fig. 5). Observe the worn place at the heel and sole of shoe. The heel of the right shoe is worn off at its right posterior edge and at its left anterior edge and the sole along its inner border. These worn places are caused by the abducted position of the foot when the heel impinges on the ground, and, as the step proceeds to completion, the foot assumes the valgus position more and more as weight is applied, and the inner border of the foot being walked on the inner anterior edge of the heel and sole are used to complete the steps, the foot finishing the step in a position of abduction and pronation.

DIAGNOSIS.

A simple method of determining flatfoot is blacking the bared sole with lampblack and having the patient walk on white paper, the imprint being compared to one of normal contour. A similar plan is to use tr. chlor. iron on the sole and while the imprint is wet sprinkle on tannic acid, giving a permanent black print. All are familiar with the contour of such an imprint, the hollow of the foot having a clear place between the heel and forefoot on the inner side in normal specimens (Fig. 3). In flatfoot, according to the degree of deformity, the clear space is more or less encroached on, as shown by the imprint. A clearer and more accurate method is to have the patient stand on a small low table the center of which is made of heavy plate glass, and by placing a mirror beneath the table the reflection of the sole is observed. The normal foot will show an anemic appearance of the skin, whiter where the pressure of superimposed weight is greatest, and this whitish area corresponds to the lampblack imprint, the flatfoot showing, of course, a larger area of whiteness. Inspection of the foot shows also eversion of the heel. A bulging of the inner border of the arch corresponds to the astragalo-scaphoid articulation. By such simple measures and the history of a train of symptoms, as hereafter to be enumerated, the diagnosis is conclusive. As to diagnosis in infants, we have this to bear in mind, that almost all infants appear flatfooted, but this is due to the fact that infants have an extra quantity of fat in the pad beneath the arch, giving a planus effect to the sole. Palpation will determine the true condition. As, however, the deformity would have to be one of considerable valgus, in order to attract attention

at this prewalking period, we are not apt to have such patients come to us. Very fat infants, especially those attempting to walk early and those having any degree of rickets, are apt to develop flatfoot. This is especially so where any tendency to knock-knee exists. The posture of such children is peculiar, the feet are held apart and the forefoot is everted when standing, the knees slightly flexed, and they stumble and fall much more frequently than other children in learning to walk. It is a condition of disproportion between weight and muscular ability, and may be further aggravated by the fact that the navicular and cuneiform bones are not completely ossified when walking is begun, thereby producing some bony changes as to articular facts.

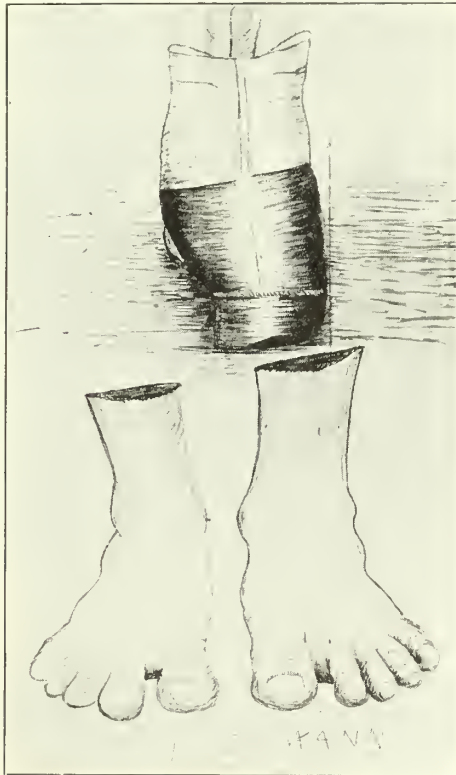


Fig. 5.—Upper picture, rear view of shoe worn by flatfoot patient; lower picture, strong feet of Bogobo native—bare-foot race.

SYMPTOMS.

These are of all grades, from very mild symptoms of discomfort up to actual inability to walk owing to pain of a severe character. The pains are more severe in certain definite locations, marked usually by certain points that are found to be tender on palpation. These are:

1. One each at the base of the first and fifth metatarsals.
2. At the astragalo-scaphoid articulation at its inner border and just in front of the internal malleolus.

3. The under surface anteriorly of the os calcis (heel pain).
4. The muscles of the calf, especially at the site of origin of the peronei.
5. About the knee-joint, especially at the insertion of the internal hamstring.
6. About the insertion of the glutei.
7. In the course of the sacral or great sciatic nerve from its exit to about the center of the thigh.
8. At the sacro iliac and sacro lumbar joints.

There is general aching and fatigue of the entire lower limbs, not otherwise definable. In addition to these symptoms, the feet become swollen after moderate walking or standing and are bathed in clammy cold perspiration, with a tendency to venous congestion.

The flatfoot patient acquires habits which grow with his or her disability, and these are to ride when once he walked, to sit where once he stood; he does not run after a street car nor run upstairs; in fact, he comes to recognize that the elasticity of his feet is gone and that pain and discomfort follow anything but moderate exertion. Wet weather usually aggravates the symptoms; hence the error of rheumatic diagnosis. When the subject is off his feet and at rest, the symptoms are quickly relieved, and in moderate cases the patient experiences ease in walking during the morning hours, with gradual acceleration of symptoms as the day progresses. In severe cases the patient may suffer considerable pain when first putting weight on the feet after rising. This is explained by the fact that the partially dislocated tarsal bones have assumed nearly the normal position during the night and are again displaced when weight bearing commences. Cramps in the leg and thigh muscles are not unusual during the night, following a day of considerable walking. The shuffling gait with knees slightly flexed and body thrown forward with each step, an attitude of cautious progression, is characteristic of these patients. The symptoms of weak arch without planus are much the same (see Fig. 5, upper half).

PROGNOSIS.

Prognosis is almost invariably good under proper treatment, mild forms do not tend to spontaneous correction, but may cease to produce symptoms sufficient to disable, providing the foot is not taxed greatly by long-continued walking or standing. All degrees of planus, even when the tarsal bones are displaced or dislocated, yield to proper treatment, even when the condition has existed for years. The prognosis of paralytic and rheumatic varieties depends on the severity of the causative factors and the probability of their continuance. The paralytic variety is usually amenable to surgical measures combined or followed by mechanical support of permanent character.

TREATMENT.

The treatment of infantile cases will be first considered. Here we have to do with the beginning deformity, say at the early shoe-wearing period. Should it be our good fortune to be called now, we may save much parental anxiety. Simple measures usually suffice to check the

foot error and are covered by the principles of correction of deformity, support of the arch and ankle joint and maintenance of equilibrium when once attained. A shoe should be selected that gives freedom to the toes and should be practically straight on the inner margin from the heel to the end of the great toe, its outer side conforming to the shape of the foot, without exerting lateral compression of the lesser toes. The counter or heel encompassing portion should be moderately firm. The shoe should lace and extend above the ankle joint one or two inches. It has been advised to raise the inner border of the sole and heel one-eighth to one-fourth of an inch to prevent pronation, but if this be done the foot continually tends to slide to the outer side and the shape of the shoe and its mechanical support are soon lost.

As the muscles of the sole, together with the peronei and tibialis posticus are so vital to the preservation of the arch, certain forms of gymnastic exercises are conducive to the cure. These exercises should be

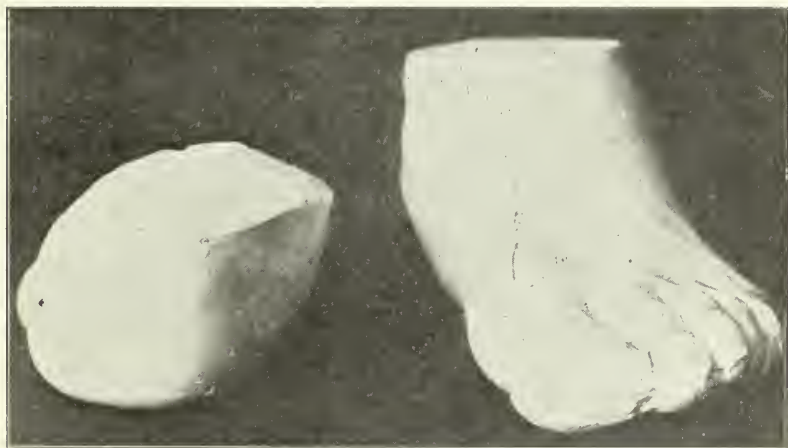


Fig. 6.—Eversion of fore-foot with partial dislocation of navicular and astragalus.

taken with the shoes off and no other covering to the foot than the stocking and serve the purpose best when systematically gone through with. The patient stands, feet turned out, and rises slowly on the toes, turns out the heels and allows them to sink slowly to the floor. The patient should repeat this twenty-five times each day, increasing the daily number gradually until he can do it 150 times. Another method is to have the patient walk a given number of steps with the feet in a position of talipes varus. Passive manipulation, massage, hot foot baths followed by cold douches to the feet are all of service in increasing the circulation and stimulating muscular tonicity. In addition to mechanical support, the patient should be taught to finish the step with the toes when walking, and not with the inner side of the sole.

Infants are best treated by placing a pad of felt on an insole to raise the arch to its normal position, then with the shoe described having a supporting effect to the muscles acting ligamentously to the ankle joint,

by its lacing, the correction is maintained. Flatfoot or pronate-footed infants, and especially fat or overgrown ones, must not be put into slippers or moccasins with the idea of allowing Nature to take care of them, for it must be remembered that it is a weakened musculature and undeveloped bones that are at fault. Older children with moderate planus can have much the same treatment, or, in addition, an arch prop of celluloid, to take the place of leather and felt.

In flatfoot of the severe variety, several operations have been devised to correct the weakened function of the tibialis posticus and peroneus longus muscles. Muller (*Journal Am. Med. Assn.*, vol. xl, p. 613) recommends the following: He detaches the tendon of the tibialis anticus from its attachment and carries it through a hole bored in the scaphoid, fixing it by wire sutures on the under side of that bone. This is presumed to act as a suspending ligament to the arch. He emphasizes the necessity of cutting the tendo-Achilles as an indispensable preliminary to this operation evidently with the idea of releasing the posterior portion of the arch from the extensor force exerted by the tendo-Achilles and thus gives the muscle of the calf a chance to regain tone.

Nicolandi is given as authority for an operation where the astragalus is displaced downward to the extreme degree. He splits the tendo-Achilles and attaches its outer half to the tendon of the tibialis posticus. This lessens the vicious action of the tendo-Achilles by forcing the head of the astragalus downward when the weight of the body is borne on the forefoot in finishing the step. This operation is preceded by an arch prop fitted after correction and is done to assist the arch prop in preserving the arch without an opposing force. In severe cases he advises tenotomy of the tendo-Achilles as a routine procedure to give the peronei and tibialis anticus opportunity to regain their tension. Of course, the tendon operations are all followed by fixation in correction by the use of plaster of paris.

For weakened arches and planus it is a good plan to use adhesive plaster as a corrective; also felt or graded leather arches under the hollow of the foot preliminary to the arch prop I am about to advocate (Fig. 1, D, E, F). In my opinion, no device meets all the requirements so nicely as does the Royal Whitman arch supporter. Dr. Whitman devised this prop to meet the following conditions, viz.: 1. To sustain the long arch. 2. To hold the entire middle foot in a moderately firm grasp, thereby preventing spreading when the arch is raised or held by the prop. 3. To prevent pronation when the weight bearing is applied. 4. To prevent the bulging outward and downward of the head of the astragalus and of the navicular.

These plates are made of 18 to 20 gauge steel, lightly tempered, nickel-plated over copper to prevent rusting, and, although not absolutely rigid, they are sufficiently so to bear the weight and not alter in form. I have, however, adopted German silver, 18 English gauge, as it is practically non-corrosive and can be worked into shape cold, requires no nickeling or tempering and is practically indestructible. To secure these arches to fit the foot properly, a cast of the affected foot should be made. Dr. Whit-

man recommends the cast of the entire foot and, in his work on "Orthopedic Surgery," describes the method of preparing such a cast. It should stand upright without tipping to either side. I have found that considerable practice is required before a true cast can be obtained. In making these casts the chair is lowered or raised to suit the individual and to allow the foot to sink lightly into the plaster. The leg is perpendicular (Fig. 7) and the foot is at right angle to the leg. This gives a good working cast after a small amount of experience in making them. This cast should be scraped away carefully at the hollow of the arch in order to exaggerate it, so that the prop, which is made to fit the cast, may have correction value. Here, again, must caution be observed else too much correc-

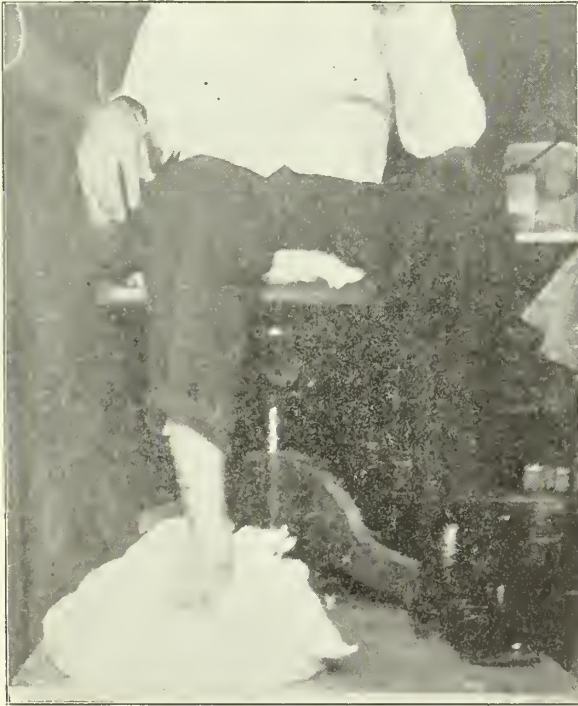


Fig. 7.—Method of making cast of foot.

tion will be attempted. In severe cases an arch prop made too high will cause a great deal of pain in the astragaloid region from pushing this bone and the scaphoid beyond moderate correction. It is better to correct the arch moderately at first and then add from time to time thin layers of leather under the hollow of the foot to gradually bring the arch to its normal position. A better procedure is to reform the German silver arch prop to give greater correction from time to time, according to the flexibility of the particular foot being treated. The support of the arch by this method is successful also in certain conditions, not flatfoot, but which I here call arch deviation, viz.: 1. Following Potts' fracture. 2. Injuries to arch ligaments. 3. Tarsal rheumatism. 4. Temporary support for

persons commencing an occupation which requires them to be on the feet on hard floors for long periods, as nurses in hospitals and attendants at asylums, institutions or floor walkers and clerks in stores, until they are accustomed to their new occupation. 5. Rupture of internal lateral ligament. 6. Pronated foot of ataxic patients.

A few cases will illustrate these uses of the props.

Case 1.—Miss C. W., age 30; height, 5 feet 11 inches; weight, 230; attendant at state insane asylum; gave history of gradual incapacity for past year. She was about to seek another form of livelihood, when her physician, Dr. S., heard of the Whitman arch props and sent her to me. Left arch partly broken with usual forefoot eversion and inward rotation of calcaneo-astragaloid articulation. Foot fitted with Whitman German silver prop with complete relief. Right foot also gave trouble, but with no skeletal anomaly. Fitted right foot with a celluloid prop (experimental), complete relief; then made German silver for right foot after same pattern.

Case 2.—Mr. L., railway employé; age, 48; height, 5 feet 7 inches; weight, about 150. Caught right foot between planking and steel rail and fell to right, rupturing internal lateral ligament and astragaloscaphoid ligaments. Arch flattened, foot painful sixty days after injury; disability, 60 per cent. He was Dr. Eckard's patient and I was called by the doctor in consultation. I recommended adhesive plaster strapping in correction. This gave immediate relief and patient promised to return for cast of foot. Did not return for three weeks, as he said the adhesive plaster relieved him. I made a cast and a Whitman arch prop of German silver with moderate correction, which gave immediate and permanent relief.

Case 3.—Mr. O. M. K.; age, 35; history of severe flatfoot from early childhood. Examination of foot showed the arch to have passed completely over and to be actually convex. Foot rigid, with forefoot everted at an angle of 35 degrees, with a portion posterior to internal malleolus. Recommended operation for correction, but he was not willing to have it done and wanted to try an arch prop. I made him a German silver Whitman prop, with three-sixteenths of an inch correction, which he is wearing at present writing, with considerable relief. This case should, of course, be operated on.

Case 4.—Miss I. L., nurse, aged 27, height 5 feet 8 inches, weight 125, was injured in right arch by grindstone falling on arch of foot at junction of second cuneiform with scaphoid, an exostosis being present. Foot since injured in same location twice. Examination showed arch almost perfect, but forefoot slightly pronated. Was suffering severe pain on walking. Dr. Robert Hanna having called me in on this case and wishing a prop made for her, I took charge without much hope for relief. A celluloid prop without correction gave immediate relief and she now wears a German silver plate, which, I think, she can eventually discard when the inflammation of the joint has subsided.

Case 5.—Miss A. G., nurse, height 5 feet 8 inches, weight 170, commencing third month of duty in hospital. Suffered severe pain in trans-

verse arch as well as long arch. Examination shows no pronation, no loss of arch. Celluloid prop made without correction to be used until accustomed to duties. Immediate and permanent relief. She is now able to go without support.

Case 6.—Miss W., nurse, commencing third week of duty in hospital. Age about 28, height 5 feet 8 inches, weight 168. Examination showed normal right arch. Left arch broken, about 20 per cent. from normal, with the usual pronation. Foot flexible. Celluloid arch prop with about 10 per cent. correction and increased in three days to 15 per cent. correction brought complete relief. This case will probably require a German silver prop for left foot. Prop of celluloid is worn on right foot without correction and gives relief very well. German silver props are being made for her. (Later— She now wears them with perfect satisfaction.)



Fig. 8.—Flexible, weak, pronated feet.

Case 7.—Mr. H. U., age 32, height 5 feet 10 inches, weight 127, barber. Stands at his chair so that the left foot takes all his weight. Examination shows arch fallen about 15 per cent., with some pronation. He complains of pain in the arch and at the base of the small toe from pressure of the shoe. The right foot is slightly affected. The left foot is flexible and a celluloid prop gives relief with 10 per cent. correction. He says he can stand full correction. German silver props made with full correction and complete relief.

Case 8.—Baby G., age 14 months. Dr. Robert's case, referred to me. Pronounced congenital valgus on weight bearing. Celluloid props were put on with full correction, as the foot was freely flexible. The baby walks now well, whereas before she rolled on her feet and often fell.

Case 9.—Miss H. H., age 25, height 5 feet 9 inches, weight 170, dress-

maker. She has been treated at Hot Springs for rheumatism of the feet and also by many physicians for the same alleged complaint. Duration about 4 years. She gives this description of her foot trouble: "My feet are not troublesome when I am not using them. I was benefited by baths, as I rested almost all the time, but pain returned in two weeks after I commenced walking again. I am all right on arising. The pain commences about noon and I can not by night walk." She finds comfort in standing in the varus position. The heels are run over to the outside through attempts to walk in this position. The forefoot is pronated and the astragalus is moderately depressed, especially in the right foot. Celluloid props made in moderate correction gave immediate relief. She reports having great comfort after two weeks. German silver props are now worn.

I am indebted to Dr. E. H. Bradford of Boston for my knowledge of celluloid for this form of work, and have found that, as he says, it can not be used as a permanent support for persons other than children or light adults. I find it especially adaptable for them and as a trial support and temporary relief while metal props are being made for heavy persons. It is serviceable also in cases, such as Nos. 1, 5 and 6, for temporary relief until accustomed to duties of new occupation. Dr. Bradford informs me that many persons prefer the celluloid on account of lightness and elasticity, coming back for new ones when broken or to have the old ones remolded when bent down.

I have called your attention heretofore to the proper shoe, and I now present a drawing of the bottom of a shoe known as the Galloway pattern. Notice two things about the heel of this shoe which contrast markedly with the worn shoe here presented, viz., the nails in the heel to prevent the wearing out of the outer posterior edge, and the projecting inner anterior edge of this Galloway heel. This prevents the rolling motion, which induces pronation. Notice also the square toe room effect. Such a shoe tends to prevent pronation and is correction in itself in mild cases if assisted by a raised insole or felt or graded leather strips (Fig. 1, H).

Dr. S. I. Schwab and N. Allison (*Journal Am. Med.*, Dec. 16, 1905), give an experience of fifteen cases of tabetic foot error in which a special shoe, something on the order of the Galloway shoe, was used, combined with arch prop of metal or a cork substitute to prevent pronation and eversion due to muscular hypotonia. The shoe also had transverse cleats, such as runners use, to give a firmer grasp to the ground. These patients all experienced greater security in walking and in many cases lost the pain in the legs, knees, etc., which accompany faulty weight bearing. Great credit is due to any one giving aid to these unfortunates.

There are certain nerve-grafting operations for the cure of paralytic varieties, all being performed to restore muscle function. These have met with encouragement, though they still form an undeveloped and incomplete part of our art. It is to be hoped that further research will enable us to restore function to groups of muscles merely lacking enervation and thus relieve the many who are suffering from drop-foot palsies, with pronated weak arches, and are obliged to rely on mechanical support.

Paralytic deformity apparatus exists in many forms, and may be selected for the individual need. Unless the flatfoot condition is very severe, it seems advisable to correct under anesthesia, in fact to correct at one sitting, and then to place the foot in plaster of paris, rather than to proceed by stages of correction. It may be found necessary in old rigid varieties to use the Thomas clubfoot wrench.

In conclusion, I wish to place myself in accord with the opinion expressed by Dr. Hoffman, of St. Louis, in the paper above referred to, in this regard, viz., that "the impression records of the longitudinal arch, commonly made by surgeons, are apparently of no value in the diagnosis of so-called flatfoot whose symptoms are dependent on a weakened arch and not on its lowness, except in so far as this lowness is a transition from an original higher condition with concomitant change in the relationship of the tarsal bones and strain of ligaments and muscles." He has found such symptoms in high arches, so have I, and, as he says, "it is equally as common to find low arches in symptomless feet" (Fig. 2). Furthermore, in women, the high French heel is accountable for shortened gastrocnemii, with consequent depression of the anterior part of os calcis and loss of the dorsal flexion function, which will cause symptomatic foot troubles, relieved by arch support; possibly (in extreme cases) a tenotomy of the tendo-Achilles being a necessary accessory to treatment.

I believe that planus is a far more common foot error than ordinarily supposed and that close observation will lead to the discovery that it is the cause of many lame feet. In the light of our present knowledge, few, if any, of these cases need go unrelieved, and, although the necessity of wearing an arch prop may become a habit, yet, if pain and discomfort are abolished, these people have cause to be thankful for the relief obtained in so simple and permanent a manner.

DISCUSSION.

Dr. Edward H. Ochsner, of Chicago:—I had hoped the essayist would be able to outline his method of treatment, but I take it that he uses a method of treatment which is generally employed, namely, the use of a foot-plate. When a foot-plate is used over a cast the objection is that the patient would be weaker at the end of three months than he was in the beginning. A plate in many cases affords very good support, it relieves pain, but does not cure the condition. When a plate is made, as so many of them are, according to the instructions of the surgeon, the patient is privileged to go to the instrument-maker, and the chances are the plate is worse than useless. I have taken many plates out of shoes where the patients complained more with them than without them. For the last eight years I have been using a method of treatment which is not open to the objection I have just made, in that it does not aggravate the condition. I have used a system of strapping, which actually cures the condition. That it cures the condition I have proven over and over again, by the relief of pain, by the greater endurance of the patient, and by the fact that a flat-foot imprint of a foot which I correct will change gradually to the imprint of the normal foot. The system of strapping I employ is a modification of the so-called Gibney strapping for ankle sprains, and, so far, I have only come across one case that has not been relieved. The majority

of cases have not only been relieved of pain and other symptoms, but of the flat-foot condition, as proven by the imprint on carbon paper.

Dr. John E. Allaben, of Rockford:—Dr. Ochsner speaks of a modification of the Gibney method. What is the modification?

Dr. Ochsner:—I simply bring the straps around on both sides and make them narrower than the Gibney straps.

Dr. George W. Nesbitt, of Sycamore:—I would like to add to what has been said in regard to Dr. Lucas' paper that I have employed special strapping, according to each case, depending upon the condition of the patient, etc. I also find that with the strappings I get better results by building up the inside of the sole of the foot, extending it from one to two thicknesses of ordinary sole, gradually grading it off to the outside, so that the outside of the sole is of the same height as the original sole was.

Dr. John E. Allaben, of Rockford:—I would like to ask a question in reference to the strapping method of treatment. Are electricity and massage used in any of these cases, and can they be employed with the strapping method?

Dr. Lucas (closing the discussion):—In regard to the statement made by Dr. Ochsner that a foot-plate does not cure the deformity, I wish to say that my experience has not been sufficiently long enough to enable me to tell whether such a plate will cure the deformity or not. I should imagine that it does not. In reply to the question of Dr. Allaben, my treatment includes massage and electricity, with certain exercises, walking in the varus position, with the foot bent in, all of these things being adjuncts, as well as the strapping which Dr. Ochsner spoke of. Strapping is a good preliminary to the taking of the cast. Dr. Royal Whitman makes a cast of the entire foot, with the patient sitting with the legs crossed. I have my patients sit in the chair on top of a table, and screw the chair up or down, according to the height of the person, and allow the foot to sink into the plaster, the foot being held at a right angle to the leg, and the leg at a right angle to the thigh. In this way I get an exact impression of the shape of the foot.

THE RIGHTS AND DUTIES OF MUNICIPALITIES IN REGARD TO INFECTIOUS DISEASES.*

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CHICAGO.

I am not unmindful of the honor which you have conferred on me in inviting me to talk to you on this very important subject relating to public health and preventive medicine. I believe that the altruistic ideal is the noblest conception of man, and preventive medicine is its most practical application. The question of the rights and duties of the municipality is one of the important questions in state medicine.

WHAT IS STATE MEDICINE?

While definitions may seem trite, I find that there is a general want of knowledge in regard to what really constitutes state medicine. State medicine may be defined as the connection of the state with the branch of science which relates to the prevention, alleviation or cure of the dis-

* Read at a meeting of the Warren County Medical Society, held at Monmouth, April 6, 1906.

case of the human body. It is "the application, by the state, of medical knowledge to the common weal, and embraces every subject for the comprehension of which medical knowledge and for the execution of which the legislative and executive authority of the government are indispensable." The authority of the state is the inherent plenary power which resides in the state to prohibit all things hurtful and to promote all things helpful to the comfort and welfare of society. It is a part of the general "police power" of the state.

The work of state medicine relates to medical education, quarantine, sanitation, education of the people in sanitary laws, the organization and maintenance of institutions for the sick and infirm, hospitals, dispensaries and sanatoria, asylums and educational institutions for idiots and feeble-minded children, for mutes and the blind; public hygiene and preventive medicine.

Before proceeding further, I crave your indulgence while I call your attention to a few fundamental propositions; propositions which may seem trite, but will bear repetition. First, then, as to where public health powers are lodged; second, what those powers are, and, third, how they should be exercised; in a word, what is the duty of the municipality in public health matters. In dealing with the first question, it becomes necessary to call attention to a few fundamental principles and distinctions that apply to all forms of government. Obviously, in all forms of government, power must be lodged somewhere, and on the seat of its lodgment depends the form of government. In a pure democracy, all power resides in the people; in an absolute monarchy, it resides in the ruler or king.

Without consuming time to deal with modifications of these two generic forms of government, it may be said that in any form of government the exercise of a power not clearly derived in accordance with the principle just stated is illegitimate and, therefore, revolutionary and dangerous. It follows, therefore, that a public health power, in order to be legal, must be logically and legitimately derived from the source of power existing in the form of government of which it is a function.

All concede that after the independence of the states was achieved and before the formation of the Union was accomplished, all governmental powers of all kinds, including, of course, public health powers, must have resided in the states or in the people thereof. By the adoption of the Federal Constitution, a national government was created, and to it certain powers were delegated, the powers so delegated being specifically enumerated. Unless it can be pointed out in the Constitution that public health powers were surrendered to the national government, they must remain in the states where they originally belonged. It may be safely asserted that no clause in the Constitution can be pointed out that transfers public health powers from the states to the nation; hence, the conclusion is irresistible that they still belong to the states.

The Supreme Court of the United States has affirmed that, while power to regulate interstate commerce does belong to the national govern-

ment, power to regulate public health does not so belong, the two powers being entirely separate and distinct. The Tenth Amendment to the Constitution, adopted soon after the ratification of the states, reads as follows: "The powers not delegated to the United States by the Constitution, and not prohibited to it by the states, are reserved to the states or to the people." In the face of these plain, strong words, and by applying to the above law, we are able to formulate this definite and incontrovertible proposition, namely, that all powers not specifically or impliedly conferred on the national government are reserved to the states. This includes public health powers.

All public health powers are a part of the "police power of the state," and Chief Justice Shaw defines "police power" as "the power vested in the legislature by the Constitution to make, ordain and establish all manner of wholesome and reasonable laws, statutes and ordinances, either with penalties or without, not repugnant to the Constitution, as they shall judge to be for the good and welfare of the commonwealth, and of the subjects of the same."

Ex-Governor Hamilton says, "The police powers of the state are plenary and inalienable, co-extensive with the natural right of self-protection, their exercise is demanded by the 'law of over-ruling necessity;' they are the foundations of all laws and regulations for the well-being or government of the people, and especially of all laws, ordinances, rules and regulations for the preservation of the health or safety of the community." Chapter 24, Section 62, of the Revised Statutes of Illinois gives city councils in cities and boards of trustees in villages the power to appoint a board of health and prescribe its duties and powers, to "do all acts and make all regulations which may be necessary or expedient for the protection of health or the suppression of disease." Concerning the force and effect of this power, the Supreme Court of Illinois says, "When an incorporated city or town has been invested with power to pass an ordinance, by the legislature, for the government or welfare of the municipality, an ordinance enacted by the legislative branch of the corporation has the same force and effect as the law passed by the legislature and can not be regarded as otherwise than as a law of and within the corporation. An ordinance is the law of the inhabitants of the municipality." Judge Dillon says, "Our municipal corporations are usually invested with the power to preserve the health and safety of the inhabitants. This is, indeed, one of the chief purposes of local government."

Prior to the adoption of the Constitution of 1870, the plan of municipal self-government was patterned on that of the New England town meeting, but there was considerable difference in details. Hence, the only special charters of cities which now exist in Illinois are those granted prior to the adoption of the Constitution of 1870. It thus seems to be clearly established that a city is clothed with the power and charged with the duty of doing all things that may be necessary or expedient to preserve the lives of its citizens.

The public control of matters pertaining to the health of the com-

munity is a comparatively new idea and, as Bagehot says, "there is no pain like the pain of a new idea." It seems to run counter to their ideas of what they are pleased to term "personal liberty," and to savor too much of what they call "paternalism." Nevertheless, it is my opinion that what is now done in the way of prevention of disease is the standard by which we measure and indicate the degree of intelligence and progressiveness of a city, and we should do our whole duty, realizing that, even from an economic standpoint, the prolongation of life by the suppression of preventable disease is of much greater value to the state than the cost of the means employed, and also because we realize that to ward off the calamity of disease and to prevent the spread of a pestilence is to increase the sum of human happiness and to elevate the race.

The broad general principle on which all modern sanitary legislation rests is that every member of the community is entitled to protection in regard to health, just as he is in regard to his liberty and property, and that, on the other hand, his liberty and his control of his property are only guaranteed to him on the condition that they shall be so exercised as not to interfere with the similar rights of others, nor be injurious to the health of the community at large.

The sanitary rights of the people depend to a large extent on what Hobbs describes as "that law which men are bound to observe because they are members, not of this or that community, but of a community," and these rights and the obligations connected with them can be defined with reasonable clearness and precision; whence it follows that they are proper subjects for legislation whenever such definitions become expedient.

THE STATE.

The powers and prerogatives of the state governments are much more numerous than those of the national or federal government. The only limitations placed by the Constitution of the United States on the power of a state government are that it shall not exercise any of the powers which have been given exclusively to the United States, and shall not do certain other things expressly forbidden. With these few restrictions, every governmental action is within the power of the state, subject only to such conditions as may be imposed by the people through the provisions of the State Constitution. This right of the state to legislate in regard to public health matters is now generally recognized and seldom questioned. The latest victory in this direction is the recent decision of the United States Supreme Court in favor of the constitutionality of the compulsory vaccination regulation, passed by the town of Cambridge, Mass.; it is conclusive on the legal question involved, while the reasoning, as a whole, may be confidentially accepted for the guidance of legislators and boards of health generally. Jacobson, the plaintiff in the case, pleaded for his "constitutional liberty" which he claimed was invaded. The decision points out the fact that the execution of the law is a reasonable exercise of the "police power" of the state, and his plea for liberty was met with the reply that "persons and property are subjected to all kinds of restraints and burdens to secure the general com-

fort, health and prosperity of the state." The minority should not have the power to dominate the majority when the latter are supported by the consensus of skilled opinion of the medical profession and by the authority of the state. The rights of man and the rights of men are coming more and more to be interpreted in the light of ultimate results and for the greatest good of the greatest number.

Every citizen owes allegiance not alone to the national and state governments, but he also owes respect and obedience to the municipal government of the city, town, county or village in which he lives. All city governments derive their powers from the legislature of the state in which they are situated and they can exercise no power or authority except such as is granted by the legislature creating the city or government. The city government is the agency provided by the state for enabling the citizens of a city to regulate their own local affairs. We thus perceive that all powers emanate from the people, laws are made and executed, courts maintained and every public institution put in operation by the people and with their consent. It is the theory of our government that the source of all power lies in the people who are governed and that they, directly or indirectly, participate in the governing.

Under the provisions of the Revised Statutes, Chapter 24, Section 62, city councils in cities and presidents and village trustees in villages are given the right to appoint boards of health and prescribe their powers and duties. They are empowered "to do all acts, make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease," and to pass all ordinances and rules and make all regulations proper or necessary to carry into effect the powers granted to cities or villages, with such fines or penalties as the city councils or boards of trustees shall deem proper, provided that no fine or penalty shall exceed \$200 and no imprisonment shall exceed six months for one offense. Under the provisions of Section 44, Chapter 24, of the Revised Statutes the city council and the board of trustees also have jurisdiction in and over all places within one-half mile of the city or village limits for the purpose of enforcing health and quarantine ordinances and regulations. The matter of establishing quarantine and of placarding infected premises consequently becomes a matter for the discretion of city councils, or village boards, or for the discretion of health officers or boards of health created by cities or villages.

With due consideration for the provisions of the statutes, the state board of health has proposed an ordinance for the protection of the public health for adoption by cities and villages, and in this ordinance the following provisions are suggested as being important in restricting the spread of contagious or infectious diseases and as being thoroughly in accordance with the provisions of the state law: It is made the duty of the board of health to require that all persons, either teachers or pupils, attending schools, shall present satisfactory evidence of proper and successful vaccination. It is the duty of the board to exclude from schools any person suffering with a contagious or infectious disease, or liable to convey such disease. The board is called on to

make or enforce all necessary rules and regulations concerning cholera, smallpox, yellow fever, diphtheria, scarlet fever, and other contagious and infectious diseases, while all public officers of the municipality are commanded and enjoined to assist the board of health in the enforcement of these rules.

It is provided that every householder within the limits of the municipality in whose dwelling shall occur any case of cholera, yellow fever, typhoid fever, scarlet fever, diphtheria, or smallpox shall immediately notify the board of health of the same, and, until permission is secured from said board, no clothing or other property that may have been exposed to infection shall be removed from the house, nor shall any occupant of the infected dwelling change his residence elsewhere, without the consent of the board. All physicians or other attendants on any person sick with any of the above-mentioned diseases shall forthwith report the same to some member of the board of health, and the local board shall at once notify the state board of health.

With such an ordinance conforming in every way with the state law, the local board of health has the authority and power to quarantine, isolate, disinfect, placard, and do any other things which in its judgment will tend to limit the spread of disease. While in a great many of the municipalities of the state an ordinance as satisfactory as this proposed ordinance can not be found, there is usually a public health ordinance having a blanket clause sufficiently broad to permit the exercise of discretion on the part of the board and to permit almost any action essential to meet existing conditions.

According to the act approved May 10, 1901, and enforced July 1 of that year, county and township boards of health are given the right to do all acts and make all regulations which may be necessary or expedient for the promotion of health or the suppression of diseases; to appoint physicians as health officers and prescribe their duties; to provide gratuitous vaccination and disinfection; to require reports of dangerously communicable diseases, and to incur the expense necessary for the performance of the duties and powers enjoined by the board; and, further, to provide penalties for the violation of any of the rules or regulations passed by the board. The board of county commissioners constitutes the board of health in counties not under township organization, and the supervisor, assessor and town clerk constitutes the board of health in counties under township organization. It will be seen from the foregoing that there is no political division of the state of any character whatsoever in which there is no provision for health officers. City, village, county and township are all provided for by the statutes.

In cases of diphtheria, the state board of health recommends (Diphtheria, Its Prevention, Restriction and Suppression, 1903, Page 6) the immediate quarantining of premises and the isolation of the patient. Children should not be permitted to mingle with children or others coming from infected premises. Children from infected premises should not be permitted to attend schools. During the prevalence of diphtheria in epidemic form, public gatherings should be abandoned, and especially

those ordinarily attended by children. It is a wise provision to forbid at all times the use of pencils belonging to schools which are distributed and taken up, being used by a number of different children. If this is permitted at any time, it should be interdicted during the prevalence of diphtheria.

The question frequently arises as to the restrictions which should be placed on adult members in a family in which there are cases of diphtheria. The state board of health recommends that no person from a house where diphtheria is present should attend public assemblies, and particularly that such persons should not come in contact with uninfected children. No person should leave the infected premises without first thoroughly washing his hands, face and hair and brushing his clothing with a whisk broom wet with Standard Disinfectant, No. 3. A person who has recovered from a case of diphtheria should be considered infectious for five or six weeks, at least, and should not during this time be permitted to go to school or to mingle in any way with the public. No person having had diphtheria should be permitted to leave quarantine until the attending physician certifies that there is no further danger of contagion and until the quarantine is declared removed by local health officers.

The attending physician has not, and should not, be permitted to assume charge of the case so far as the relation with the public health is concerned, unless the attending physician happens to be the public health officer. Differences of opinion and conflict can only be avoided in the presence of contagious disease when the attending physician understands that the public health officer or the board of health constitutes the only power authorized to raise quarantine, release the patient or declare disinfection and fumigation satisfactory. All premises in which diphtheria occurs should be placarded by the local health officer, and all children therein confined to the immediate premises, and steps should be taken to prevent all unauthorized persons visiting the premises. Diphtheria should be reported promptly to all public libraries, and these libraries should be instructed not to receive any book or books returned from the infected premises. The closing of schools during an epidemic of diphtheria must remain a matter for the discretion of the local board of health. The school board must obey absolutely the orders of the board of health. Disinfection and fumigation should be done by the local health authorities or to their satisfaction by some competent person to whom they delegate this power. The rules which apply to diphtheria are also applicable to scarlet fever. The rules and regulations for physicians and health authorities in the care of smallpox will best be found in *Smallpox, Its Prevention, Description and Suppression*, 1905.

In the suppression of infectious and contagious diseases of the state, no point has been more thoroughly impressed on me than the mistake of permitting attending physicians to assume the duties of local health officers. If the attending physician is permitted to dictate the character of quarantine, and to use his own methods in disinfection, he will frequently go further, and the public health officer who is held responsible

by the people for their safety has no means of knowing how well or how poorly this work is carried on. Many persons of wealth and influence desire that exceptions be made in their own cases, that their houses shall not be placarded, that they be allowed special liberties and special privileges, and the attending physician is much more apt to yield to the solicitations of his patient than would the conscientious public health officer.

The local physician should not be allowed to placard the house; he should not be permitted to establish quarantine; he should not be permitted to raise quarantine; he should have it impressed on him that these features of the case rest entirely in the hands of public health officials, and he should be brought to time for assuming the powers of such an official. Every municipality, every county and every township should have rules providing for the immediate reporting of contagious or infectious disease. If this is not done, it will frequently be found that physicians in their desire to gratify their patients will withhold information in regard to contagious disease and the public will suffer thereby.

The laws of Illinois are broad enough and sufficiently elastic to permit the local authorities of almost any section of the state to enact such rules and regulations as may be deemed by them desirable, and the most important feature at this time, in the supervision of the public health of the state, is to induce local authorities to take advantage of the powers granted them by the statutes, and to establish local boards of health. The State Board of Health has repeatedly recommended to the Governor the enactment of laws not only giving to the various political divisions the right to establish boards of health, but making it mandatory on them to do so, and it is probable that effective local health organizations will not be secured throughout the state until such a law is enacted and enforced.

Under existing conditions, however, the failure to establish local boards of health must be laid at the door of the people. With powers so great and so sweeping, there is no real reason why competent local boards should not govern in their protecting capacity every acre of the state of Illinois.

THE IDEAL HEALTH OFFICER.

The rapid increase in our population increases the dangers to the public and increases the degree of skill in competent public protection. The higher plane of general and special education on the part of the people increases the requirements of knowledge on the part of the public health officer. The general appreciation of the value and the necessity of the sanitary protection of the public; all these contribute to the rapidly growing demand for competent and specially educated health officers and the willingness of the people to properly compensate them for their labors. No longer is the municipality content to entrust the lives and health of the people to him who is health officer in name and merely city scavenger in fact and practice. The realization is gradually creeping upon the public mind that the public health officer, entrusted with the health of the community, must not be the professional or intellectual inferior of the one to whom we are willing to entrust our individual

health. The day has practically come when municipalities, awakening one after the other, will insist on having men of special qualifications to guard these things so essential to the health, the life, the happiness and the prosperity of the community.

The acquisition of such special knowledge by men of executive ability as will permit them to take their places as state and municipal health officers, will obviously benefit the public in many ways, nor will such special education be without due compensation for him who acquires it. The people of a republic must "feel before they will see the necessity for action," but the people of the nation have already felt and now begin to see clearly that such competent health officers will afford a degree of protection which, from a purely commercial standpoint, will be exceedingly profitable. Too frequently, pestilential disease, with suffering and death, with panic and stagnation of business, has been the price of the employment of untrained and incompetent health officers.

But what must be this special training of him who would be competent in the broad field of state medicine? Obviously his knowledge must be based upon a liberal medical education. But there must be far more. The competent physician is not necessarily capable of satisfactory health administration. Primarily, however, medical education must be the foundation and no part of medical education is non-essential. If a proper understanding of the cause and origin of disease is necessary to intelligent treatment, it is absolutely indispensable for the better knowledge of prevention. In the cause, the origin and the character of the disease, we find embodied practically all of the branches of medical education, with the exception of therapeutics. And still the well qualified health official should not be lacking in therapeutic skill and training.

But aside from the various branches of the usual medical course, the health officer should be informed on the theoretical and practical phases of sanitation, hygiene, ventilation, sewage disposal, water purification and protection of water supplies, disinfection, fumigation, quarantine, the production and use of the various protective and curative sera, sanitary plumbing and all of the subjects which go to make up sanitary science and, in addition, he should receive far better and more extensive training in laboratory methods in hygiene and sanitation than is usually to be had by our medical schools.

Up to this point the qualifications and requirements are almost purely medical, but these are but a part of the qualifications of the well rounded public health officer. A careful and conscientious study of the public health laws is most essential. Legislative bodies are inclined to give remarkable powers to their health boards and officers, but laws framed by those entirely unacquainted with the needs of sanitary government frequently miscarry and not infrequently act prejudicially rather than favorably in public health administration.

The state or municipal health officer should be able to detect the flaws in health ordinances and statutes. He should profit by the experiences of other states and cities. He should be conversant with the powers and limitations placed upon him through the laws and the judicial inter-

pretations of the laws. He should act fearlessly in his capacity and should take advantage of every power and utilize it for the benefit of the public health, but he should appreciate that he is a part of the government and should never overstep the bounds which the laws have placed about him. He should be able to draft rules and regulations for the control of public health, which will contain every possible element of strength, but which will not conflict with the laws and which will not be found legally defective in times of their enforcement. He must, in fact, acquire a considerable amount of technical knowledge and his efficiency will be vastly increased if he cultivates an unprejudiced and judicial mind. But he must be able to go even further. In either state or municipal government, the health officer naturally becomes a member of the cabinet of the executive. He must be the adviser in medical and sanitary matters. He should be able to suggest proper legislative reforms and to appreciate the possible unfortunate results of sanitary and public health legislation.

Scientific in his training, he must not become the slave of the test tube and the microscope. He must be able to meet with men, to influence them to assist him in public health measures. He must be able to harmonize opposing factions without relaxing in the proper enforcement of his rules. He must cultivate the people and must gain the power to carry public sentiment with him in favor of good and in opposition to bad legislation. He must be a student of government and, in a way, a student of politics. He must become a politician in the support of the best interests of public health and he must be able to meet the opponents of sound and good measures at their own game and to defeat them upon their own ground. He must assist and even take the initiative in the making of laws, the necessity for which he alone is first to recognize.

In this field the health officer of the state or municipality may accomplish as much for the people as in any of the purely sanitary lines. In our own state, during the sessions of the last General Assembly, the health officers of the state, the secretary of the State Board of Health, entered upon the floors of the legislative bodies and led with success the opposition to a half score of measures inimical to the best interests of the health and well being of the people. And far from the least of the accomplishments of the competent health officer, he should fit himself to become the teacher of the people. He should be able to bring to those of moderate intellectual attainment all of the facts of sanitary matters in a simple and an intelligent way, couched in words that are forceful and direct, in sentences full of interest and meaning, but in simplifying these things for the people, he must not depart in any way from scientific accuracy and truth. The education of the people as to the cause and prevention of contagious diseases, as to the dangers from filth, from insanitary conditions and unhygienic living, is probably, in the long run, more effective than any other form of sanitary work.

The health officer should be free from the vicissitudes of partisan politics and of such a high order of merit as to deserve and receive both public and professional confidence, well worthy of being trusted with all

information in regard to disease, one who will not only do his work well, but will see to it that his subordinates are equally conscientious and trustworthy. He should be a tactful and persuasive man. Before accepting the office he should understand fully that the efficiency of the health officer requires him to interfere with the convenience of some citizens, the stubbornness of others, the avarice and ignorance of others. His requirements will often provoke criticisms of both his methods and his motives. This is inevitable and must be borne with tact, patience and dignity. Recognizing that he is endowed with authority, he should act with good sense and good judgment, being careful always to remove any hardships that can be safely removed, avoiding all things that are unnecessary and ineffective, imposing no needless restrictions, and yet seeing to it that all instructions are obeyed implicitly, enforcing all rules and regulations sanely, humanely and fearlessly. Many will appreciate his good work, he will have the approval of his own conscience and he will be sure of his reward, if not in this world, then surely in the next.

OBSTETRIC ASEPSIS AND ANTISEPSIS.*

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Obstetric asepsis and antiseptics preceded surgical asepsis and antisepsis. To speak of surgical cleanliness is an anachronism, for it was an obstetrician who first recognized the cause of infection and who laid down the rules for its prevention. Fifteen years before Tyndall discovered the germs in the air, seventeen years before Pasteur proved that decomposition of liquids occurs when germs gain access to them, and five years before Lister obtained his medical degree, Ignatz Philip Semmelweiss had announced to the world the real nature of puerperal and other wound infections, and had prescribed a successful prophylaxis. Semmelweiss knew nothing of germs, but he saw with crystal vision where childbed fever and surgical pyemia originated and he proclaimed the truth to the world in these words: "I teach that every case of childbed fever arises through the absorption of decomposing organic matter; these deleterious substances are most often brought from the outside to the individual; the carriers of these deleterious substances are the examining finger, the operating hand, the instruments; bed clothes, the air, sponges, the hands of the midwives, and nurses, who touch the bed pans of infected puerperæ or other sick, and then come in contact with newly delivered or parturient women. In short, the carrier of the infection is everything that, soiled with decomposing organic matter, comes in contact with the genitals of the patient. In rare cases these deleterious substances may arise within the puerperæ."

"Puerperal fever is not limited to the puerperium, but is the same disease as pyemia, being only a variety of the latter." It is generally believed that Sir James Y. Simpson first compared the puerperal uterus to an open wound and puerperal fever to an infection of the same, but

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Cruveilhier, long before him, had done this and Semmelweiss, more clearly than either, pointed out the analogy. "You obstetricians, you surgeons," cried Semmelweiss, "you have the poison on your hands, on the utensils, the instruments; and, everything else, infection through the air, auto-infection, predisposition is of little importance." In an open letter to Scanzoni, Semmelweiss says that surgeons die from wounds they acquire from infected cases, or as he puts it, from the introduction of decomposed animal matter into accidental wounds.

For the prophylaxis of puerperal infection, Semmelweiss demanded, first of all, the disinfection of the hands of the accoucheur, and of the nurses, and the sterilization or removal of all supplies or instruments that had come in contact with "decomposed organic matter." Change these three words to the single word "germs" and we have the theory absolutely up to date, and in every way correct. Semmelweiss ordered the isolation of infected puerperæ, and those suffering from infectious surgical or medical diseases, and he demanded that the operatives in the obstetric wards shall not come in any way in contact with "decomposing organic matter." In short, he promulgated the doctrine of "non-infection" which only in the last few years is being adequately appreciated. And all this in 1847 and 1848!

Seventeen years later came Pasteur and Koch, who demonstrated the bacteria in Semmelweiss' "decomposed organic matter," his "deleterious substances." Nineteen years later came Lister, with his occlusive dressing and carbolic acid spray, fearing the air more than the hands. Then comes a long train of German and French workers out of which these names may be selected: Trendelenburg, von Bruns, von Mikulicz, Schimmelbusch, Doleris. They all rediscovered and placed on a scientific basis, the truths Semmelweiss had seen and announced decades before.

However, it is not the principles and practice of aseptic technique that I intend to speak to-night, though statistics prove that puerperal fever is just as prevalent now as it was twenty and forty years ago. Williams, of Wales, in the Milroy Lecture, 1904, shows that in England and Wales the mortality from puerperal septic disease, in 1901, was 2.24 per 1,000, and in 1861, 1.27 per 1,000. This is a large and unnecessary mortality, and in addition, the number of cases of severe but not fatal infection is very great, and shows little tendency to diminish. What are the reasons for this continued mortality and morbidity? 1. The principles of asepsis have not yet thoroughly permeated the great mass of the medical profession. 2. The social conditions, in which the vast majority of confinements are conducted, are not favorable to an aseptic delivery, and the time, effort and pains required of the physician to force such favorable conditions are not compensated for by the public, either by money or by gratitude and recognition. 3. A small proportion of the deaths from sepsis is absolutely unpreventable by any known human means. In maternity hospitals, the mortality has been brought down to the last mentioned class, and the properly conducted maternity hospital is now the safest place for a woman to have her baby.

In recommending a technique to the general practitioner, then, it

would be advisable for him to imitate, as far as the conditions of the patient permit, and as far as he can force them, the aseptic methods of the most scrupulous maternity or surgical operation room. Let him regard the obstetric patient as liable to infection to the same degree as a patient whose abdomen has been opened and upon whom a laparotomy has been performed.

That it is possible to develop a fine aseptic technique in the home of the patient is proven by the daily experience of the Chicago Lying-in Hospital Dispensary. In this service over 7,300 consecutive full term labor cases have been conducted in the homes of the poor and poorest of the city, with but one death from sepsis. Rubber gloves are used in the conduct of all our work, and as antiseptics we rely on the liberal application of lysol and bichlorid, externally.

But there are several principles for the conduct of an obstetric case, which, while they have nothing to do with the killing of germs, are of great influence in obtaining a normal and afebrile puerperium.

1. During Pregnancy.—Cure any local disease, as vaginitis, cervicitis, or other infections as thoroughly as possible before labor supervenes. An appendicitis should be operated on early. The same may be said of salpingitis, the diagnosis of which is harder to make. Instruct the patient in methods of local cleanliness. Forbid coitus and self examining in the last month of pregnancy.

2. During Labor.—Insist on having the best of everything in the house for the confinement. If you do not ask for it you will not get it. Every puerpera is a wounded woman, and infection enters the wounds and the vital principle of all methods of prophylaxis is to prevent as far as possible, parturient injuries.

Limit the number of internal examinations to an irreducible minimum and make them very gently, so not to tear the softened mucous membrane. Conduct the labor, as far as possible, by external examination. The state of the cervix and the possible prolapse of the cord are the only points in a labor indeterminable by external examination. The writer conducts the majority of normal labors with one internal examination, often without any at all, and rarely two or three. Do not rupture the bag of waters until there is a strict indication for it, and let one condition be, a completely dilated os. Avoid all measures to shorten the time of normal labor, as manual dilatation of the cervix, of the perineum, or having the woman bear down before the head has slipped through the cervix. Do not give ergot until the placenta has been delivered. Do not apply forceps until there is an honest, scientific indication for their use. Do not use douches, especially hot ones, or antiseptic ones. These rob the vagina and cervix of their epithelium and their natural protecting secretions. Prevent perineal and vaginal tears, as far as possible, which means, a patient conduct of the second stage.

3. During the Third Stage.—During the placental stage, the rules for the prevention of infection apply with doubled force. The mortality of the third stage of labor is greater than that of the other two stages combined, and its importance corresponds to the death rate. Most practi-

tioners, and all students, do not think so and most text-books treat the third stage in a superficial manner, but the experienced *accoucheur* and the vital statistics will bear me out in the above statement.

The third stage should be conducted as physiologically as possible. Interference should be instituted only on strict indication, above all manual removal of the placenta should be attempted only when hemorrhage occurs or the structure is pathologically adherent. Great care is to be exerted to obtain the placenta and the membranes complete, as retained portions of either furnish pabulum for the organisms naturally in the vagina, and they retard involution which, when normally progressing, offers a barrier to infection. The uterus should not be bruised by too early, too frequent and too strong attempts at Credé expression of the placenta, or too much and too forcible massage.

The placenta and membranes should be carefully inspected to determine if pieces of the former or shreds of the latter are missing. Such an examination consumes five full minutes and should never be neglected. It is the keystone of the treatment of the patient, should never arise subsequently. The cases in which it is impossible to determine this point are rare. If a piece of placenta is missing, it must be removed at once. If a piece of membrane less than one-half remains in the uterus I usually do not go in after it. If the uterus balloons out with blood, or if there is external hemorrhage, the cause is frequently found to be such a piece of membrane, wrapping up a blood clot. Removal is then indicated. See that the uterus is empty of blood clots, hard and firmly contracted, before you leave the house.

4. After the Third Stage.—Repair all lacerations of the perineum that are deeper than one-half inch. A large number of cases of infection originate in the perineal wound. It is preferable to do this after the delivery of the placenta, as the parts are not obscured by flowing blood, the tissues are not so swollen and stretched, and one can so arrange the patient that better work may be done. Then too, if one sews the laceration before the placenta is delivered, the proper conduct of the third stage is neglected, and also the placenta will, as it passes over the wound, force blood between the stitches, which will prevent proper healing. The one consideration of saving the *accoucheur's* time should not weigh against the above disadvantages.

After every operative delivery and after every breech delivery, and in all cases where there has been a rapid dilatation of the cervix, examine the whole utero-vaginal tract for lacerations. You must know, without the least cavil of a doubt whether or not there is a perforating injury of the parturient canal, you must determine exactly the number and extent of the puerperal wounds. This advice is not given for normal cases, but for operative and abnormal cases.

After the puerpera has been cared for on the lines just indicated, the parturient canal is to be severely left alone. No douches are given. The single indication for douches, in my opinion, is hemorrhage. Before introducing the hand into the uterus in any manipulation, I wash out the introitus and lower third of the vagina with lysol solution and

bichlorid on cotton pledgets. This is to avoid carrying higher into the uterus particles of feces, etc., which may have reached this point through the various manipulations connected with an operative delivery.

5. During the Puerperium.—Leave the woman alone. Make no internal examination, give no douches; practice only external, vulvar antiseptics. If the perineorrhaphy wound becomes infected, remove the sutures and open up the wound. If the puerpera develops fever do not do anything, if you are certain that the placenta was complete. If you are not sure about the placenta it may be necessary to invade the uterus, a procedure at this time fraught with great, often fatal danger. The importance of having determined the empty condition of the uterus right after delivery may now be appreciated.

In no place in all medical practice does prevention play such a leading rôle as in puerperal infection.

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THE ACTION OF ANTISEPTICS UPON THE PARASITE.*

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Ever since the positive recognition of the existence of bacteria, a continual search for antiseptics and germicidal agents has been in progress. Almost every conceivable material has been used. Yet with all this there is little beyond the facts as shown in the original tables of Miquel. Antiseptic value and germicidal strength must be differentiated. One is the restraining and the other the killing effect. The first is of most interest in its commercial application, the latter in its medical and sanitary bearing.

Bacteria are extremely delicate structures and the chemistry of their protoplasm is entirely analogous to the general chemistry of higher organisms. In the absence of spores, life resistance is slight. But this does not modify the fact that, in a practical way, the destruction of infectious agents is not as easily accomplished as theoretical observations would indicate. The ordinary cultivation of bacteria is not so easily accomplished, but that there are constantly present numerous factors that are interfering with the desired result, and this even in the absence of definite poisons to the cells. In a practical way a disinfectant must act at once, therefore, the rapid killing strengths alone are of value. The entire problem resolves itself into the practical proposition of how to get the various available agencies in contact with the infecting organisms and also the requirement that damage must not be done to the tissues.

Without entering into the details of the limits of efficiency of the many substances that have been used as disinfectants, we may consider certain principles that are involved in the action of the various classes or groups of available substances. In the testing of disinfectants, the methods of investigating may be undertaken along several lines of procedure.

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1. The application of solutions in various strengths to mass specimens of bacteria:

(a) Inoculated platinum wire dipped into solution; (b) the glass rod method dipped into solution; (c) the silk thread method immersed in solution.

In all of these, after the time elapse in a given case, the bacterial specimen is transferred to show if growth is still possible.

2. Suspensions of bacteria.

(a) Suspensions of test organisms in bouillon or distilled water, to which is added an equal amount of a definite strength solution of the antiseptics, thus reducing the strength to one-half; (b) the rubbing into a definite strength solution, a scraping from a surface culture, usually agar. Drops from such mixtures are transferred to blank tubes of media at the end of different time periods.

3. The microscopic method.

Preparation of hanging drops of definite strength solutions into which are placed a few organisms and the effect of the solution is actually seen.

The microscopic study of the action of poisons on micro-organisms has been a field of interest for many years. This has not been limited to observations in bacteria, but has also included other fungi and infusoria. Any marked change in the concentration of solutions causes an osmotic disturbance of the bacterial cell contents, plasmolysis being applied to retraction of protoplasm, and plasmoptysis to a swelling and bursting of the protoplasm. The possible relation to absorption of poisons can be shown by the absorptive changes that occur during the application of dye stuffs. The gradual absorption of pigmentation can be seen. In this connection, some observations upon yeast cells has a bearing. That is, the tendency to collect mineral matter from the surrounding medium. It would seem that much of this activity is not immediate, but is gradually progressive.

In consideration of methods, it may be said that the Committee on Disinfectants of the American Public Health Association has attempted to formulate some uniform procedures to be known as standard methods for testing disinfectants. Rideal has proposed the same, but rather as a matter of comparison in what is known as the coefficient or disinfection value.

It does not seem possible at this time to devise any standard methods. Indeed, the selection of certain species of bacteria at test objects is not generally acceptable. In all experiments to determine antiseptic action, a number of factors may cause variation in the results. There may be changes in reactions caused by the disinfectant substance; osmotic effect upon bacteria when they are transferred from one solution to another; the temperature at which the test is made, or the incidental presence or absence of several substances, especially albumin, but also peptone and extractives. If these factors are not considered, the result may be greatly changed in a given series of tests, when they are repeated. This may be illustrated by the action of sublimate upon anthrax bacilli, as shown long

ago by Behring: 1-500,000 in water, killed in a few minutes; 1-40,000 in bouillon, killed in a few minutes; 1-2,000 in blood serum was not always certain.

The action of disinfectants depends upon chemical action. The effect is, therefore, entirely in line with the demonstrable limits of chemical reaction in general. Under two conditions, however, there is certainly something beyond our immediate methods of recognition of the limits of reaction in a chemical sense. These are the effect of ionized salts upon micro-organisms and the complex processes of agglutination and bacteriolysis which take place in extreme dilutions. The immediate effects causing death, that we can note, are coagulation of the cytoplasm, oxidation, chemotaxis, and absorption by the cytoplasm of the poison.

With due regard for the extensive reports of experiments with all manner of disinfectants, the list of eminently antiseptic substances is short. Formaldehyde is the only recent addition to show value over 1-10,000 in antiseptic strength. Without attempting a classification of antiseptics, we may briefly consider a few facts as to the action of the chief available groups.

The Metallic Salts.—Of all of the metals or metallic salts, three stand foremost and are so different in action that they are true poisons; viz., mercury, silver and copper. Raulin, in his experiment in 1857, noted the poisonous action of these elements. His experiments were devised to discover the necessary mineral foodstuffs for micro-organisms. These experiments led to a grouping of the elements into those that were useful or essential to living plants; those that were inert, and those that were actually poisonous. Magnesium, sodium and potassium are of the first, the iron group of the second, and silver, copper and mercury, of the third.

Miquel found these of highest value as antiseptics, and there has been nothing to materially change our opinion as to their efficiency. The action of salts of these metals is not entirely dependent upon coagulation of protoplasm, because their efficiency is much increased when coagulation is avoided. The double salt, mercurio-potasso-iodid, is more active as a germicide than bichlorid, because it does not coagulate albumin as strongly as the former. The action of the metals themselves as destructive agents towards bacteria is well known. Fermentation in copper vessels is unsatisfactory and metallic silver is very destructive to bacteria coming in contact with it. This was clearly proven in several series of experiments undertaken by the writer to show the bacteriologic condition of different coins.

A most important fact concerning metallic salts is that the union with cytoplasm is a permanent chemical bond. By the microscopic method, it has been shown that dilution into the millions act injuriously upon cells. In such conditions of dilution, the damaging influence can be more rationally attributed to ions than to the salt itself, and the metallic ions are the true poisons, shown in a series of experiments with different salts. The action of formaldehyd, as far as can be ascertained, depends on its tendency to become completely oxidized. This is seen in the active reaction between it and an oxidizing agent, as permanganate of potassium.

This would also explain the difference in action upon bacteria and higher forms of life. The delicate cell walls of bacteria offer less resistance to the abstraction of oxygen than those of more complicated organisms. Such oxidation results in formic acid, which is also poisonous to protoplasm.

Carbolic Series.—Carbolic acid, cresylic acid and the cresols are simply coagulating substances, and act as germicides by rendering the cell protoplasm insoluble. Their value is, therefore, low, and is in proportion to the extent to which coagulation is produced.

Essential Oils.—The experience of bacteriologists is that essential oils act as antiseptics, and when the oils are washed from the cells they will revive. The place of these bodies as restraining agents is very well fixed and they should be more extensively used with this end in view. My own experience would not warrant accepting them as belonging to the stronger disinfectants.

Oxidizing Agents.—The oxidizing agents are potassium permanganate, hydrogen peroxid, and numerous complex chemicals. The action here is largely due to wet combustion. Their activity is in direct proportion to the oxygen available. For special purposes they have found proper place. However, when the oxygen is used, action ends and renewed growth may be started from a few possible remaining viable organisms. In a practical way, positive action can only be expected when the dye is applied in great excess.

Should conclusions be summarized, it would seem that the action of very few substances is such that in suitable strength a combination with cell protoplasm will readily take place and will certainly kill. After discussing Flugge's directions for disinfection, Professor Robinson, in the report of the Committee on Disinfection of the American Public Health Association, last year, concludes that much of our information is too complicated, and says: "Nothing is better for gross disinfection than milk of lime; for bedding, clothing, etc., steam, hot water and hot soda solution; for quick sterilization of the hands, 1-1,000 sublimate is best, and for room disinfection, formaldehyde holds first place.

FIFTY BACTERIOLOGIC TESTS OF HANDS, BRUSHES, GLOVES, PASTEUR-FILTERED WATER, STEAM AND FORMALDEHYD STERILIZERS, AND FORMALDEHYD DISINFECTION OF ROOMS.*

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Aside from the periodical testing of sterilizers and of his own hands and those of his assistants when it was least expected—to which the writer has been accustomed for years—the occasion for the present experiments is the testing of the efficiency of the apparatus of a new hospital, which embraces some new features, and to bring to a discussion, incidentally, the formaldehyd disinfection of rooms. According to the most authoritative investigations and conclusions on the subject that

* Read before the Chicago Medical Society, May 23, 1906.

have been a matter of record for years, and likewise according to the very creditable and recent experiments of the Illinois State Board of Health, some rather serious errors in formaldehyd disinfection have obtained in our city (Jacques, *Jour. Amer. Med. Assoc.*, Jan. 13, 1900; Owens, *Jour. Amer. Med. Assoc.*, March 3, 1900). This was occasioned by faulty experiments, in which the micro-organisms were exposed to the antiseptic gas while in their culture medium. In doing this the medium absorbs the antiseptic gas so rapidly that it is no longer a food for the germs and they do not multiply. But it is a serious error to think that because no colonies develop that, therefore, the germs which were purposely introduced are dead, because collateral experiments, correctly conducted, show that they are probably alive. All bacteriologists, in making such tests, expose the germs to the gas in a dry state on pieces of thread or paper as carriers that are too small to absorb and hold enough of the gas and to carry it into the culture medium, where it might inhibit the growth, if they are not dead. The threads were used here, and in order to carry them safely from place to place and to expose them safely and without danger to the other contents of the sterilizers little stubby bundles of "floss" (mercerized cotton thread used in embroidery) held together in a knot were placed in small test-tube-like homeopathic vials, made to order, quite strong, and with no neck, with a lumen of nearly half an inch, and about two inches deep. Into the bottom of these the threads could readily be placed by sterile forceps, and they were retained by a loose gauze diaphragm, placed half way to the bottom and a tighter cotton cork at the mouth of the tube. The latter were generally removed in the room experiments to admit the gas more readily, but not in the others. For the selection of the bacilli to use in the various tests and for advice about the general plan of this work, I am indebted to Prof. R. Zeit, from whose laboratory the germs were obtained and replenished as often as needed to assure sufficient virulence. The germs experimented with were the spore-bearing anthrax bacillus, *Bacillus coli communis*, *Bacillus pyocyaneus* and the *Staphylococcus aureus*. All the experiments, except the hand and water tests, were made with pure cultures, and every single experiment or group of experiments with the identical batch of germs was offset by a "control" test.

Hands.—In the hand experiments, the hands are first scrubbed for eight or ten minutes in hot water, changed several times, with soft soap and rather stiff sterile brushes, that are kept so by sterilization in formaldehyd gas and storage in 8 per cent. formalin, in solution. Next, the spaces under the finger nails (properly trimmed) are very carefully scraped with the ends of good nail files, at first with the bare steel, and then with the same covered with gauze soaked in soft soap. The roots of the nails are likewise attended to. The hands and arms are then scrubbed in the same manner as before, in hot water, with a good wad of gauze full of soft soap, instead of a brush, for five to eight minutes more, and are then rinsed off in a current of water. They are then immersed to the elbows for three to five minutes in a deep tubular glass vessel, filled with bichlorid of mercury, 1 in 3,000, solution. Then they

are treated with alcohol, two to four minutes, and are finally soaked in quite hot sterile water for fully ten minutes, to remove all disengaged remnants of antiseptics. A small bit of sterile cotton is now twisted on one end of a thick and stiff platinum wire, mounted by the other end in a glass rod. The covered end is then seized additionally in a pair of slender forceps and is rubbed under the ten finger nails and across the roots of the nails of one person. The cotton is then deposited aseptically in a bouillon tube. Another similar wad of cotton is rubbed firmly along the grooves of the palms of both hands and the folds of skin between all the fingers and is deposited in another tube. In this manner eight pairs of cultures were prepared on two occasions from seven persons' hands and observed in an incubator at about 100 F. for ten days, without the slightest sign of growth in any of them. These tests would have been still more severe if the hands had been soaked in a boiled solution of sulphid of ammonia, instead of merely sterile water, previous to the grafting; but the water only was chosen, because it more nearly corresponds to the practical conditions in operating.

Filtered Water.—In this hospital, unlike most others, all the water that is intended for drinking and for surgical purposes is passed through a large Pasteur, so-called germ-proof, filter, of the most approved type, before it is sterilized. It is, therefore, a matter of much interest to know whether the water is germ proof after it has passed through the filter. On each of two days, therefore, four gallons of water were allowed, to percolate through a cork of absorbent cotton, in the bottom of a funnel, under strictly aseptic provisions and conditions. Nothing was visible, macroscopically, on these cotton plugs when they were transferred with greatest aseptic care into bouillon. Both of these cultures developed a film on the surface in five days, which did not increase much during ten days' further observation and left the bouillon clear beneath it. Microscopically, this film consisted mostly of large rhomboid crystals with transparent agglutinating material, and, after the addition of acetic acid, the crystals disappeared with liberation of a gas and only dots of coagulated gelatinous substance remained. No signs of micro-organisms.

Brushes and Gloves.—The results in experiments with infected brushes and rubber gloves will appear incidentally in the tests of the sterilizers in which they constitute a part of the test objects.

Steam Sterilization.—Underlying this are several fundamental principles that are not sufficiently known or appreciated, viz., (1) that the air must first be removed from every sterilizer, because a mixture of air and steam does not kill. (2) Dry heat or dry air is worth almost nothing in surgery, because it does not penetrate and requires too high a temperature to kill. It is of value only for laboratory dishes and for things that are to be destroyed. It is only in combination with sufficient water moisture that heat penetrates and kills, and that steam is most germicidal, other things being equal, which contains a maximum amount of this moisture. (3) Steam under pressure tends to become dryer. It may become too dry or "superheated," when its germicidal property diminishes, approaching that of hot air. The best review on this sub-

ject is by Bruno Heymann,¹ of the Fluegge Laboratory at Breslau, from whence many of the best researches on disinfection during recent years emanate. He describes seven different mechanical and chemical devices, aside from the anthrax spore test, by means of which the moment of penetration of a sufficiency of heat and moisture in the contents of a steam sterilizer is noted, and by some of them the duration of their action can also be determined.

Two types of steam sterilizers are in efficient use; one that works on the principle of Robert Koch's "Dampftopf," in which a current of the wettest kind of steam passes through the disinfecting chamber unconfined, preferably from above downward, and displaces the heavier air by gathering above it and crowding it out at the bottom. The penetration of a sufficient degree of moisture in this type of apparatus attends or produces the required temperature of 100° C. and the latter can readily be ascertained experimentally by placing a self-registering thermometer in the lower strata of the disinfecting chamber. This type of apparatus is more certain in its effect, if properly constructed, in unskilled hands, and is by far the most simple and inexpensive, but it requires about double the time that pressure machines require for disinfecting a charge. According to von Esmarck,² the firing surface of this type of sterilizer should not be less than $\frac{1}{4}$ square meter in area for a cubic meter of disinfecting chamber, while in the pressure steam apparatus it should be $3\frac{1}{2}$ square meters for one meter of chamber space.

The other type of apparatus embodies steam under pressure in a closed chamber, from which the air is previously removed, partly at least, by being heated by means of a surrounding steam jacket, and then drawn off, in some of them at least, by the passage of a current of steam over a small aperture. The contents of the sterilizing chamber being previously heated to near the boiling point of water and being placed in a partial vacuum, they are prepared for very energetic action of the steam that is introduced under pressure, and does not require a long time to act. But the degree of absence of air and the degree of moisture of the steam under pressure are somewhat uncertain and yet most vital features in the process that only an expert operator would be able to determine. But this difficulty is overcome, according to Heymann, by employing both a stationary thermometer and a manometer to measure the pressure. Reynault has worked out a standard table of relations between these two, the temperature of saturated steam and its pressure. Thus, at $\frac{1}{10}$ of an atmosphere it must be 102.7° C. and at $\frac{2}{10}$ atmosphere it must be 105.2° C. This relation must be noted in each operation. But what to do when this required standard is not attained I would not know; and the much more complicated mechanism of the pressure apparatus makes it proportionately more liable to get out of order. An expert is needed to repair it, while any tinner can repair a non-pressure apparatus. But the only conclusive proof of the efficiency of any form of either type of such apparatus is afforded by testing it with

1. Heymann, Bruno: *Zeitsch. f. Hygiene u. Infectiouskrankh.*, vol. I, p. 421, 1905.

2. von Esmarck.

spore-bearing germs of known virulence or resistance, as the writer has attempted to do in the following experiments. When not otherwise designated, two large Boeckmann sterilizers were employed, in which a current of quite wet steam (not confined) is active. They are provided with specially large gas fires and their outer cylinders are covered with asbestos to prevent the otherwise useless radiation.

Four of the experiments were made by putting one of the four different germ tubes above described into four fingers of an uninjured rubber glove and not removing the cotton stoppers. A strand of gauze of the size of a small finger was also introduced to extend from the base of the fingers out of the gauntlet to prevent collapse of the glove. It was then wrapped successively in two towels, fastened with safety pins, and placed in the center of sheets, towels, gowns, etc., within the sterilizers. Counting from the time when steam began to appear at the top, the firing was continued two hours in the first, one and a half hours in the second and third experiments and one hour in the fourth, with an additional half hour in each test merely to dry out the things. None of these showed any growth, although spore-bearing anthrax was always present. In two other experiments a package containing the four different germ tubes was placed in the bottom of an open fruit jar crammed full of gauze. These were also fired two and one and one-half hours, respectively, with the half hour for drying added. These eight tubes also gave no growth.

In three experiments a package containing the four germ tubes was wrapped in a particularly large and firm bundle of clothes and cotton, with a special effort to embarrass the penetration of the steam. These were also steamed two, one and one-half and one hour, respectively, plus one-half hour for drying each. The anthrax in the one-hour experiment was suspicious of growth after ten days in the incubator. All the others remained clear. Two new finger brushes were sterilized in steam and soaked in a large bouillon culture of spore-bearing anthrax, wrapped in gauze and cotton, and dried at 60 to 70 F. These brush packages were treated at different times for one and one-half hours in the current of steam, plus one-half hour for drying. The brushes were then placed in bouillon in large Petri dishes for ten days. No anthrax grew in either of them. In one a fungus grew as an accidental contamination.

Six other tests were made of a pressure steam sterilizer of the type of the Kny-Sprague apparatus. In the first four a package containing the four germ tubes was introduced in each test and in the last two the anthrax alone was introduced. These packages were placed as nearly as possible in the center of each charge to be sterilized. As usual forty-five minutes' firing was done each time, of which five minutes was to heat and exhaust the air, then twenty minutes to sterilize and twenty minutes to dry the contents. None of these eighteen tubes developed a growth, while the controls all grew.

Formaldehyd Sterilizer.—This consists of a galvanized iron box, 18 inches high, 18 inches deep and 20 inches broad. It has a door on the front face, 17 by 19 inches, which is hung by hinges at the bottom so

that it can be used as a shelf when open. It is constructed quite airtight everywhere, except at the door fitting and a two-inch hole in the bottom through which a moderate flame from a Bunsen burner plays against a piece of sheet iron, which is laid over this hole on the inside. On this sheet iron a shallow graniteware dish is placed, containing usually one ounce of formalin in three ounces of normal salt solution, which is evaporated during one and one-half hours' firing. The apparatus is allowed to remain closed half an hour longer. This box is covered externally by asbestos and is coated with enamel paint inside. Its back and side walls project six inches beneath its bottom so as to secure a protected space for a small Bunsen burner to stand and to burn evenly beneath. This flame is so adjusted as to require about one and one-half hours to evaporate the four ounces of liquid in the dish. As the interior space is $3 \frac{7}{10}$ cubic feet, a little over two drams of formalin is required per cubic foot. This was accepted as a working rule after the following tests had been made in this apparatus: In each of four experiments a set of four germ tubes was placed in a sound rubber glove wrapped as above mentioned and treated the first time with one and one-half ounces, each, of formalin and normal salt solution, with two hours' firing of apparatus.

Second time, one and one-half ounces of each fluid, one and one-half hours' firing, plus one-half hour drying.

Third time, one ounce of formalin, two ounces normal salt solution, one and one-half hours' firing, plus one-half hour closed.

Fourth time, one ounce of each fluid, one and one-half hours' firing, plus one-half hour closed.

All of these sixteen tubes remained clear except the anthrax tube, in the fourth experiment, which grew.

Twice a test package of the four germ tubes was placed in the bottom of a fruit jar crammed full of gauze. This was treated once with ten drams of each fluid and fired one and one-half hours, all tubes remaining sterile; the other time with one and one-half ounces of formalin and three ounces of salt solution and fired two hours, and of this the anthrax grew.

On two occasions a test package with all the germs wrapped in sheets, etc., and treated once with one and one-half ounces of each fluid and fired one and one-half hours, plus one-half hour closed, and the other time with one ounce of each fluid and fired one hour plus one-half hour closed. All these eight tubes remained sterile in the cultures afterward. Again, two finger brushes sterilized in steam and heavily charged with anthrax spore culture and dried were treated in this formaldehyd oven, with other things, each time with one ounce of formalin and three ounces of salt solution, with one and one-half hours' firing, plus one-half hour closed. In one of these the door of the oven was not closed tightly and a growth of anthrax followed. In the other nothing grew.

This oven is the best thing in which to sterilize rubber gloves, because they are available for use, dry with boric acid as a dusting powder instead of the insoluble and inert talcum powder, and while the rubber becomes brittle gradually they do not become baggy as they often do when

boiled thoroughly. A dry glove is much easier to put on after the spaces under the finger nails and fine grooves of the skin have been rubbed full of boric powder treated with this gas. It is evident that this powder absorbs and holds much of the gas, which counteracts the infectious elements in the sweat, because its action on the skin will be excessive if the powder is used rather freely. When rubber gloves are treated in steam sterilizers, that are effective, in order to have them dry for use, the rubber surfaces frequently stick together in spite of free talcum powdering. All other soft and hard rubber articles are injured in formaldehyd gas much less than in hot water or steam, while leather parts are ruined in steam. Iodoform, boric acid and other dusting powder shakers can not be sterilized along with their contents by any other known method, and ordinarily are a very filthy thing in a surgical sense. But by passing through this formaldehyd oven every time after they have been filled they conform to asperis and are a very useful adjuvant.

Disinfection of Rooms.—For this purpose numerous more or less complicated machines have been invented and patented in this country and in Europe. But they are mostly cumbersome or complicated and too expensive for boards of health to invest in in sufficient number. They are really not needed, because, according to numerous investigators, practical disinfection can be carried out with formaldehyd gas generated by simple means. Among those who have conducted the best investigations and contributed the best information on this important subject in recent years are Werner,³ Kister,⁴ Trautmann,⁴ Engels,⁶ Roemer,⁶ Herzog,⁷ Meyer and Wolfert,⁸ O. Voges,⁹ Ravenell and Gilliland,¹⁰ Kinyoun,¹¹ Paul F. Mueller,¹² Vaullaird,¹³ C. Fluegge,¹³ Joergensen,¹⁵ M. von Brunn,¹⁶ and the Illinois State Board of Health.¹⁷ Some of the practical facts elicited from these experiments are as follows: (1) Formaldehyd gas is best obtained from a 40 per cent. solution in water either by spraying it over all the surfaces and objects in a room and keeping it closed for 12 or more hours, or by boiling it diluted several times with water either in an open vessel if inside the room or in a retort-like apparatus when outside of the room. To prevent polymerization it is well to dilute it about three times with water and likewise to add a little common salt, chlorid of calcium, menthol or glycerin. The Illinois State Board of Health directs one to pour one pint of formalin over three and one-half ounces of permanganate of potassium in an asbestos covered vessel. (2) The action of formaldehyd gas is greatly intensified by the pres-

3. Werner: Archiv. f. Hygienie, vol. L, No. 4, p. 305, 1904.

4. Kister and Trautmann: Zeitsch. f. Hygienie, u. s. w., vol. xlv, No. 3, p. 379, 1904.

5. Engels: Archiv. f. Hygienie, u. s. w., vol. xlix, No. 2, p. 129, 1904.

6. Roemer: Beitrage z. Experimentellen Therapie, vol. vi, No. 3, 1903.

7. Herzog, H.: Centralblatt f. Bacteriologie, etc., vol. xxxiv, No. 2, p. 170, 1903.

8. Meyer and Wolfert: Archiv. f. Hygienie, etc., vol. xliii, Nos. 3, 4, p. 171 u. 221, 1902.

9. Voges, O.: Centralblatt f. Bacteriologie, u. s. w., vol. 32, No. 4, p. 314, 1902.

10. Ravenell and Gilliland, University of Penn. Med. Bulletin, vol. 16, April 1, 1903.

11. Kinyoun: U. S. Public Health Reports, vol. xii, No. 5, p. 89, 1897.

12. Mueller, Paul T.: Centralblatt f. Bacteriologie, etc., vol. xxx, No. 13.

13. Vaillard: Archiv. de Med. et de Pharm., vol. xxxix, No. 3, p. 169, 1902.

14. Fluegge, C.: Zeitsch. f. Hygienie, u. s. w., vol. L, No. 3, p. 381, 1905.

15. Joergensen: Zeitsch. f. Hygienie, u. s. w., vol. xlv, p. 237, 1903.

16. M. von Brunn: Zeitsch. f. Hygienie, u. s. w., vol. xxx, No. 2 1899.

17. Ill State Board of Health, Bulletin on Practical Disinfection, Jan. 2, 1906.

ence or combination with it of an abundance of water moisture, so much so that some have thought that it was not so much the dry gas, but its watery solution on the surface of things, that was the active agent. (3) Formaldehyd gas also greatly intensifies the germicidal quality of steam. Steam of 70° C. up to 80° C. temperature can be borne by leather articles, according to Fluegge and Herzog. If such steam is generated from a 1 per cent. formaldehyd watery solution it kills all resistant germs so that objects which would be injured in steam of 100° C. can be disinfected in this manner. (4) Formaldehyd gas usually acts only on the surface of things, but, by creating a partial vacuum first, it will penetrate better. (5) Formaldehyd gas, when liberated, rises at first toward the ceiling of a room and then descends in constantly diminishing efficiency toward the floor. One investigator has used electric fans to distribute it better. (6) Its action is aided by warmth. Rooms should be warmed to about 60 or 70 degrees F. previous to disinfection. (7) The chemical neutralizing agent of formaldehyd is ammonia. (8) From twelve to sixteen ounces of formalin are needed for every 1,000 cubic feet when all apertures are closed. This will kill tubercle bacilli if they are superficially exposed, but all walls, furniture, cases, drawers, etc., require in addition to be disinfected by mechanical and chemical means.

Disinfection of Rooms. Experiment 1.—An attic room was selected containing 850 cubic feet of space, with many clothes closets and drawers, with one small window and a door, both of which were calked carefully. Temperature 70° F. inside. In this and in each of the following seven similar experiments two germ-test packages were exposed, one about one and one-half feet from the ceiling on one side of the room, and the other about one and one-half feet from the floor on the other side of the room and each about two or three feet of horizontal distance away from the sheet, when that was used to evaporate the formalin, and four to five feet away from the generating vessel, when the permanganate method or the boiling method was employed. Each package contained three unstoppered germ tubes in a little gauze holding, respectively, the colon bacillus, *B. pyocyaneus* and staphylococcus. In the first experiment thirteen ounces of formalin (one pint in 1,000 cubic feet) were soaked up by a bed sheet, which was hung over a clothesline drawn about four feet from the ceiling in such a way as to bisect the room diagonally. The lowest borders of the doubled sheet reached to about two feet from the floor. The room remained closed twelve hours. In this first experiment the *Bacillus colon communis* of the ceiling test and the colon bacillus and staphylococcus of the floor test showed growths subsequently in the bouillon cultures.

Experiment 2.—The same room and arrangement with double the quantity of formalin, twenty-five ounces (one quart to 1,000 feet). The room was closed twelve hours. Both ceiling and floor tests showed no growth subsequently.

Experiment 3.—Same room and conditions. Thirteen ounces of formalin poured over three ounces of potassium permanganate and the room left closed for twelve hours. Temperature, 70° F. In the ceiling

test all three grew. In the floor test the pyocyaneus was spoiled accidentally, but the staphylococcus and *B. coli communis* also grew.

Experiment 4.—Same room and arrangement with twenty-five ounces of formalin (one quart to 1,000 feet) poured over permanganate. Ceiling test gave no growth. In the floor test the staphylococcus grew.

Experiment 5.—Hospital laboratory, 1,620 cubic feet in basement. Four half windows and one door, carefully calked. Temperature, 65° to 70° F. Floor and ceiling tests placed as before. Two bed sheets drawn nearer the floor than the ceiling, so as to secure about equal areas around them and about two feet away from the test packages. All germ tubes unstoppered. Twenty-eight ounces of formalin (one pint to 1,000 feet) evaporated on the sheets. The room was closed for twenty-four hours. Of the ceiling test the colon bacillus grew and of the floor test all three germs grew.

Experiment 6.—The same room and arrangement with fifty-one ounces of formalin (one quart to 1,000 cubic feet). In both ceiling and floor tests all germs were dead.

Experiment 7.—A kitchen and pantry of 2,500 cubic feet. One door and one large and two small windows were all made tight. Temperature, 65° F. Floor and ceiling tests placed as in previous experiments, but the cotton stoppers were not removed from the germ tubes and they were also wrapped with cotton instead of gauze as formerly. Five pints of formalin (one quart to 1,000 cubic feet) with three pints of warm water added were divided in two parts of four pints each and placed in shallow dishes over two Roentgen alcohol stoves, having one pint of wood alcohol in each stove and standing in opposite parts of the room about four feet from the floor. The alcohol flames could be seen through a window to burn one and one-half hours. Of the diluted formalin a thick syrupy sediment remained in the dishes, showing that polymerization had occurred and that not all the formalin had been evaporated in the boiling process, evidently because it had not been diluted sufficiently with water. The room remained closed twelve hours. Of the ceiling test in the experiment the pyocyaneus and staphylococcus grew, but in the floor test package all were dead. It is evident that more water should have been added in this experiment to prevent the formation of a solid residue and a stronger fire likewise was needed to evaporate the larger quantity of liquid in shorter time so as to secure the greater efficiency of a denser and larger volume of formalized steam acting for a shorter time.

Experiment 8.—A large clothes closet with one door and two small windows, 500 cubic feet. One pint of formalin (one quart to 1,000 cubic feet) and one pint of water evaporated over one alcohol stove within a wash boiler about three feet from the floor. The room was closed twelve hours. Upper test package yielded no growth. Of the lower package the colon bacillus and the staphylococcus grew. These experiments are not sufficient in themselves to admit of definite conclusions. As far as they go they indicate that a sheet method of diffusing the formalin is rather better than the others here tried. But it is evidently advisable to make use of two pints of formalin for every 1,000

cubic feet rather than only one pint. What the Illinois State Board of Health and all other authentic investigators have laid stress on must not be neglected, i. e., that this disinfection attends only to the air and the superficial surfaces of things in the rooms treated, that upholstered furniture, draperies, unwashable clothing, bedding, etc., should be, in addition, sprayed carefully with formalin or some other chemical disinfectant in solution and then exposed to the open air, the sovereign disinfectant, to eliminate both the odor of the chemical agent employed and the remaining infectious elements. Likewise that drawers, bureaus, cases, floors and woodwork should be washed with a potent antiseptic solution, like 5 per cent. carbolic acid or formalin, and that the walls should be wiped or sprayed with the same mixture and the apartment opened up for efficient ventilation. To leave the laity under the impression that the disinfecting fumigations alone actually completely disinfect everything in such rooms is a most deceptive and dangerous practice.

THE ATTITUDE OF THE PHYSICIAN TOWARD THE NOSTRUM EVIL.*

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On being asked by the chairman of this Section to prepare a paper on this subject, I accepted with considerable trepidation for several reasons. The indiscriminate prescribing of proprietary remedies has reached such a stage that it may be stated, without fear of exaggeration, that legitimate prescription writing is in a fair way to become an extinct art. Now, in view of the many and serious evils arising from this, it is necessary for us to orientate ourselves thoroughly as to the exact status of affairs. This is a rather delicate question, and I am only too keenly aware of the fact that whatever may be the conclusions at which I shall arrive, there will be some who will be disposed to differ from me. The subject is one to which I have been giving some attention for many months past, and in conversation with many well-informed men I find that there seems to be a general lack of knowledge as to the enormous proportions which the nostrum evil has attained.

To obtain some definite and precise information on the subject which is capable of being reduced to figures, I have proceeded as follows: I have requested a number of druggists in different parts of Chicago, as well as in cities outside of Chicago, to go over some hundreds of consecutive prescriptions and furnish me with a list of proprietary remedies therein prescribed. From a large city in an adjoining state I obtained a list of 200 consecutive prescriptions containing 91 proprietary remedies, an average of $45\frac{1}{2}$ per cent. From a pharmacist whose activity is confined largely to the poorer districts I obtained a proportion of approximately 75 per cent. of proprietaries prescribed. The smallest list, received from a druggist in one of the wealthier parts of Chicago, was something over 20 per

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cent. This list is, however, defective, in that it leaves out of consideration a number of so-called pharmaceutical specialties, which are, in reality, as much nostrums as the others.

Now, some very plain truths should be emphasized at the beginning. We have been accustomed to distinguish between patent and proprietary medicines. In a general way, the profession understands by a patent medicine one which is advertised to the public, and by proprietaries those which are advertised only to the medical profession. This is a purely an arbitrary distinction, because, as a matter of fact, there is no technical difference between patent and proprietary medicines. Again, we talk about nostrums and ethical proprietaries, and by inference the latter are legitimate preparations; the former, in one way or another, are fraudulent. Dr. George H. Simmons, than whom no one is better qualified to speak on this subject, has suggested that it is imperatively necessary that we have a standard by which we may judge the proprietary preparations and by which we may put them into the class of nostrums or ethical proprietaries. I can most heartily subscribe to his four propositions, which are, *seriatim*: 1. There should be no secrecy nor mystery connected with their composition. 2. There should be no secrecy nor mystery regarding the firm which makes them nor the place where they are made. 3. There should be nothing in the advertising literature concerning their therapeutic value which is untrue or misleading. 4. They should not be advertised, directly or indirectly, to the public.

Now, to these criteria, absolutely no valid objection can be raised. If the drug is one whose action is known and whose medicinal value is established there can be no possible reason for making a mystery of it, except for the purpose of deceiving the physician. I conceive that the right and wrong of the matter is as follows: Let us assume, for the sake of the argument, that cascara is a drug which requires special facilities for its best preparation; facilities which a retail druggist is unlikely to have. Now, if the firm of Blank & Co. devise a process which is especially advantageous for obtaining a pure and efficient cascara, they are entitled to the rewards which may flow from this, provided they make no false claims for it and use no mystifying language in regard to it. In other words, if they advertise to physicians only Blank & Co.'s cascara, stating frankly that it is nothing more nor less than a simple cascara and leaving out of their advertisements all therapeutic indications, under these circumstances, I think, there can be no objection to a physician when he prescribes cascara to specify Blank & Co.'s. But if the drug is officinal and one which any first-class druggist can and does prepare properly there can be no excuse for prescribing the proprietary article. Again, suppose the manufacturer either calls his product by some misleading or irrelevant name or advertises it as indicated, where, as a matter of common knowledge, cascara would not be indicated, then such action should condemn the article absolutely. As regards the name of the manufacturer, the same rule is to apply. It is a matter of common knowledge that some supposedly reputable firms prepare and sell articles under another firm name, organizing a so-called firm for this purpose. As the only motive for this can be a desire to deceive, all such products should be ruled out

as fraudulent, irrespective of any opinion as to the intrinsic value of the preparation.

The third qualification which I regard as by far the most important, i. e., that there must be no misleading or exaggerated therapeutic claims made for it in the advertising matter, is, I think, self-evident. And yet just here is the most delicate point to decide. Nowhere are opinions so at variance as in therapy. In consequence, a little, a very little, latitude may perhaps be safely allowed. When, however, we find uric acid solvents advertised in such a preposterous way that every man at all conversant with the subject knows that they are palpable falsehoods, then is the time to call a halt. Or when we find a simple tonic claiming to cure diabetes and Bright's disease, or when we find a simple mixture of cardiac stimulants promised as a cure for valvular defects, our wonder at the colossal impudence of their vendors is exceeded only by our wonder that physicians can be found who will prescribe them.

A recent trip by the writer to an adjoining state was made the occasion for examining the methods of manufacture of one of our oldest and most reliable manufacturing houses. I met the head of the firm and had some very illuminating conversation with him on the subject of proprietary remedies. He assured me that his firm had complied at once with the demands of the Council on Pharmacy and Chemistry and was happy to do so. Further, he stated, it simply involved changing the therapeutic claims made by them for a number of their products. As he very frankly remarked, "Our business is a commercial one, Doctor, and we have no interest in educating the medical profession." Of course, not, although it is open to question as to whether the detail men of their firm are not telling some doctor this very thing day in and day out. Most illuminating, and certainly most painfully candid, were his next remarks, substantially as follows: "Doctor, there are something like 140,000 physicians in the United States with whom I have been for many years in the closest touch, and it is quite safe to say that 120,000 of these prescribe proprietaries, good, bad or indifferent, for the simple reason that they are densely ignorant of any scientific therapeutics or materia medica. They want these products, we have them to sell, and there you are." Now, that was not a pleasant thing to have said to one, and yet there are certain things which make us wonder if there be not a good deal of truth in this statement.

The following clipped from a well-known journal certainly does not tend to disabuse us of the truth of this statement: "The Minnesota State Board of Medical Examiners (doubtless other state boards have had the same experience) have observed, during the last few years, many candidates who passed excellent examinations in the other branches who displayed hopeless ignorance in answers to questions concerning materia medica, and particularly concerning prescription writing. There is evidently something wrong in the teaching of materia medica in our medical schools, and it is quite time for a radical change in these methods."

An editorial in a prominent southern medical journal, speaking along this same line, says: "The essential factor in all this is much more radi-

cal. The fault lies in the training of the medical man himself. It is not far from the mark to say that nine-tenths of the graduates of medicine know little or nothing of pharmacology. Prescription writing is acquired slowly after practice has begun, and the vast majority of young doctors copy prescriptions of older men or follow those printed in the text-books. The struggle of the medical student for his degree discounts all interest he may have in acquiring any of the elements of a medical education not required in the curriculum. The U. S. Pharmacopeia is practically unknown to the average medical student and physician and original prescription writing is as lost an art as Damascene blades."

In a symposium on the proprietary medicine evil before the Chicago Medical Society, in discussing the responsibility of the medical teacher for existing conditions, I came to the following conclusions: First, the subject of medicinal therapeutics in general has been subordinated to an undue degree to pathology and diagnosis; second, in his teachings of therapeutics, clinically, the medical teacher has contented himself too often with vague general statements, instead of recognizing that the subject is essentially one of detail and entering on its discussion in the most minute way; third, the teacher has presented the subject of therapeutics at the wrong moment psychologically, instead of in direct connection with the subject of practice; fourth, the teacher of materia medica has often failed to do his complete duty in not acquainting the student with the situation in regard to nostrums as it actually exists and, by thus sounding a note of warning, sending him out forewarned and forearmed.

In a nutshell, the reasons why so large a number of physicians prescribe proprietary remedies is, first, because of a sadly deficient training in materia medica and therapeutics; second, because a lack of knowledge of these subjects makes him fall an easy prey to the grossly exaggerated therapeutic claims of many proprietary compounds, and, third, because it is so much easier to write a single word, such as Tongaline, Phenalgin, Bromidia, etc., than to write prescriptions containing the same ingredients.

There is another and shadier phase of the matter. There are medical men who have stooped so low as to furnish paid write-ups or to contribute original articles purporting to be original research, but which are, in reality, thinly disguised recommendation for this or that proprietary preparation. Small wonder, then, that the general practitioner, reading of these things, proceeds to use them.

Some one may say, as a well-known physician said to me only recently, "Why shouldn't we use proprietary compounds?" I do not wish to enter into this discussion at length, but only to express what seems to me to be the sane, conservative aspect of the situation. I submit the following propositions which, I believe, can be safely defended: First, the overwhelming majority of proprietary preparations are of too little value to deserve a place in our therapeutic armamentarium; second, a pretty large number of proprietary remedies, particularly many synthetics, can be adequately, and often more than adequately, replaced by standard

drugs from the Pharmacopeia. Whenever this is the case the Galenic preparation should be used.

It is true that a very small number of the new proprietaries have genuine merit. These are, as a rule, adopted by the Pharmacopeia just as soon as the proprietary interest in them ceases; but, inasmuch as this requires a number of years, what is the physician to do in the meantime? It seems to me that the Council on Pharmacy and Chemistry will be our most valuable guide in this direction, composed, as it is, of men of tried capacity in their respective lines. They can, and are, doing what the individual physician can not do for himself, except in isolated instances. I am not unaware of the fact that there has been some opposition to the Council, from certain quarters, which is, as I think, entirely unjustified. The subject is so enormous that no individual can have an adequate opportunity to judge the merits of any considerable number of these compounds. We must, therefore, rely on some central authoritative source of information, and this seems to me to be the best solution of the problem.

Let us assume, then, as an established fact that proprietary remedies are prescribed much oftener than their merits warrant, possibly in the proportion of 100 to 1, nor do I think this proportion exaggerated. In a long list of proprietary remedies which I found to be most frequently prescribed, I found almost none which could not either be advantageously replaced by the standard drugs of the Pharmacopeia or which were not intrinsically worthless or fraudulent. Let me quote you a few examples. In one short list we find the following chosen at random: Celerina, Gray's Glycerine Tonic, Tongaline, Bromidia, Freligh's Tonic, Arsenauro. Seng, Fellow's Syrup of Hypophosphites, Sal-hepatica, Phenalgin, Anasarcin, Mercauro, Neurosin, Colchisal, Ammonol, Antikamnia, or the following combined in one prescription, which is certainly a gem: Milk of Magnesia, Glycothymoline, Elixir of Peptenzyme, Lloyd's Hydrastis, Expectorozone, and, lastly, shades of the departed Hypocrates! Liquozone. It seems impossible to believe that a metropolitan physician would prescribe Liquozone, and yet even this appears repeatedly on the list.

Now, is the matter of therapeutics, after all, so very difficult? I think it may be fairly stated that the great masters in medicine, masters of diagnosis and therapy, and by these I do not mean the therapeutic nihilists, use a very limited number of drugs. With thirty or forty carefully chosen drugs one has about all that are ordinarily required. Even this might be considered by some a liberal estimate, and yet, as I think back to my own college days, I think of the many weary hours I spent listening to discourses on the pharmacology of a whole list of drugs which I have never prescribed and have never known any one who did prescribe them. What seems to be imperatively demanded is an accurate, comprehensive and detailed knowledge of a small number of standard drugs, and especially the precise indications for the use of each in pathologic conditions, including a thorough drill in the practical minutiae of prescription writing.

A little serious, thoughtful consideration along the lines I have so

imperfectly sketched will make it clear that, viewed from the standpoint of scientific medicine, we can advantageously dispense with the overwhelming majority of the proprietary nostrums which are so freely prescribed. I would that I might end this discussion of this subject here. There is, however, another phase of the matter which appeals very strongly to me and to those who believe with me in the dignity of the medical profession. It is a painful thing to reflect on the fact, for fact it surely is, that the traditional esteem in which the medical profession has always been held is steadily lessening day by day and year by year. There was a time, and not so many years ago, either, when our profession was ranked as the learned profession. Have we all, down in our inmost hearts, the feeling that our patients regard us in that light to-day? Notwithstanding the fact that the medical man of to-day must have mastered many times the knowledge which but a few short years ago was deemed sufficient, notwithstanding the fact that the medical man of to-day must and does master many times the amount of knowledge required in the sister professions, yet in spite of all this the ancient dignity and esteem in which medicine was held is slowly dwindling.

Let us admit that the commercializing tendencies of the day are, in part, responsible for this, yet there still remains the unquestioned fact that we ourselves, as a profession, are responsible for the most of it. Why? Our patients know nothing of how much knowledge the physician is possessed, except in so far as they see it practically displayed in his advice, and more especially in his written prescriptions. Imagine an educated, intelligent, wide-awake layman being examined by his physician and bearing away perhaps, as a sole result of such examination, a prescription for some one of the nostrums. What will be the patient's opinion of the physician who has signed his name to a prescription for Gray's Glycerine Tonic, Freligh's Tonic, Seng or others of that ilk? I suspect that he will put the medical knowledge of the physician on a par with the medical knowledge of the corner apothecary, who has given him similar advice gratis on sundry occasions. Furthermore, you may depend on it that the patient who has once had given him by his family physician some nostrum with a high-sounding title and absurd therapeutic claims will promptly take the absurd claims at their par value, and the next time he is ill will proceed to the nearest drug store, buy some more of the same nostrum for himself and recommend it to his friends as having been given to him by Dr. So-and-So, and so many a patient is led to that most pernicious habit of self-drugging.

The druggist who fills the prescription often knows its real worthlessness better than the physician himself. He says to himself: "I can do equally well," and then turns counter prescriber. The ceaseless repetition of this sort of thing has degraded, in the eyes of the laymen, both physician and pharmacist until they are regarded as little better than retail nostrum peddlers. If every Tom, Dick and Harry feels himself privileged to slap his family physician on the back and call him "Doc," with about the same amount of respect, or less, than he would show his

hostler, let not the physician complain, for he is, to a great extent, responsible for this state of affairs.

Let us freely admit in our professional family gathering that we have been, and are being, made the cat's paws of the nostrum men, who laugh at us behind our backs. Through our own indifference we have been led into becoming so many detail men for these nostrum vendors, and, in so doing, we have taken one step, and that a very long step, indeed, away from the time-honored traditions and dignity of the science and art of medicine. I am not one of those who believe that the present downward trend of medicine in public esteem represents its permanent place; on the contrary, I think that even now the tide is turning and our profession is coming into its own. The very name "Doctor" implies learned, and just so surely as the standard of medical attainments is going onward by leaps and bounds just so surely will medicine regain her true place as supreme in the learned professions.

The first practical step towards this end seems to me to be the choking out the nostrum evil, a parasite which has had its origin in the indolence and indifference of the medical profession. Success in this direction will be a comparatively simple matter once we have recognized the true situation. A very small part of the knowledge and energy which every physician is constantly giving to his work would, if applied to the eradication of this evil, do away with it in a very short time. Indeed, there are already signs of improvement. In another city where the nostrum evil had reached, a year or so ago, an even worse stage than in Chicago, I find from the last two hundred prescriptions, taken consecutively, but twenty-one calling for proprietaries. This number is, of course, still many times in excess of the justifiable proportion, and yet it shows the diminution to one-half or one-third of that which but recently obtained. All that is necessary is to arouse the profession thoroughly to the exact situation and, as it always has done, it will act promptly and efficiently and wipe out this blot on its fair name.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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AUGUST, 1906.

THE RENOVATION OF THE ADVERTISING COLUMNS OF DAILY PAPERS CIRCULATING IN THE STATE OF ILLINOIS.

On July 3 the following letter was mailed to the leading daily papers in the various cities of the state and of St. Louis which are most widely distributed in the State of Illinois. In answer to this letter the following communications have been received. It seems that the conscience of a number of the advertising managers has been awakened on this matter and that it needs only active effort on the part of the better class of citizens to secure quite a noticeable improvement in the advertising columns of all daily papers. We commend this work to the various county societies and shall be glad to give place in THE JOURNAL to resolutions and letters bearing on this topic:

Advertising Manager.

Dear Sir:—I have just received a copy of *Printers' Ink* for June 27, 1906 and have been greatly interested in reading what the advertising managers of the various New York dailies think concerning the policy of printing personals, advertisements of specialists in diseases of men, announcements of get rich quick concerns, wild cat mining schemes, clairvoyants, help for ladies in trouble, and other advertisements that are usually denominated fakes. It appears that very few of the New York managers permitted ethical considerations to play any part in determining the paper's policy. Notable exceptions are the *New York Times* and *The Sun*.

Representing the Illinois State Medical Society, the largest and most influential professional body in the West, the members of which are vitally interested in the character of the daily papers entering the homes of the people, I beg to inquire what the attitude of your paper is towards such so-called "fake" advertisements as are listed above. First, do you exercise any supervision or censorship over such

advertisements submitted to you? Second, do you think it the function of a newspaper to present its readers with only reliable advertisements; third, do you adopt the policy of taking advertisements indiscriminately, leaving your patrons to use their own judgment concerning them?

An early reply for publication in abstract in the ILLINOIS MEDICAL JOURNAL will be greatly appreciated. Yours very truly, EDITOR.

THE PEORIA JOURNAL.

Dr. George N. Kreider, Editor ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Dear Sir:—This is in reply to your esteemed favor of July 3d. The writer believes that no newspaper can reasonably assume the entire responsibility for all of the advertising that appears in its columns. Advertising space in a newspaper is a public utility, the same as any public service corporation. Any publisher must exercise a certain amount of discretion in accepting advertisements, in protection of his own interests, but the moral responsibility for the truth or falsity of an advertisement lies entirely with the advertiser. When an advertiser buys space in a newspaper, it becomes his property and unless he violates the postal laws or the moral laws, it is not the office of the publisher to dictate to him how he shall use his space. We believe that it is not right for a publisher to accept advertisements that he positively knows to be fraudulent. *The Peoria Journal* will not accept such advertisements.

If there is any further information which we can give you along these lines, kindly let us hear from you. Yours very truly,

DAILY JOURNAL CO.

ROSS F. WALKER, *Advertising Manager.*

THE CHICAGO RECORD-HERALD.

ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Gentlemen:—Replying to your favor of the 2d, the *Record-Herald* tries to be very discriminating in accepting advertising for publication. We eliminate all medical advertising of a questionable character, and all bucket shop and questionable financial advertising. This runs into a great many pages in the course of a year, but even with all the care that we can exert there will creep into the columns from time to time, advertising that had we known in advance of its unreliability we should not have published.

You must realize that in the publication of a daily paper everything is hurried and action must be taken on the instant, so that unless we have absolute knowledge of the unworthy character of the advertiser, we accept the copy, edit it under our rules, and discontinue, if we later learn of its unreliability.

If there is anything being published in the *Record-Herald* at the present time that you have reason to question, we will be pleased to have you point out the same to us, that we may discontinue if the circumstances warrant it.

Yours very truly,

GIRARD PIERCE,

Business Manager.

THE SPRINGFIELD STATE REGISTER.

Dr. George N. Kreider, Editor ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Dear Sir:—In answer to your inquiry of July 3d, regarding censorship of advertising, will say we watch our advertising somewhat closely and reject all advertising for fake concerns, as far as we can. We do not insert advertising for "Ladies in trouble," "General debility," "Matrimonial agencies," "Guessing contests," "Get rich quick schemes," etc., and we insist that all advertising for cures for male or female diseases be couched in language that will not be offensive.

In regard to mining or other ventures, we draw the line, if we think they are fraudulent. But, in spite of considerable vigilance, some things are overlooked and advertisements work in that we do not want to publish. In the course of a year, we turn down several hundred dollars worth of business that we see inserted regularly in the metropolitan papers. I do not know that it pays in dollars and cents to refuse such advertising in a daily paper, as the papers that insert it have much larger circulations than we have and they do not seem to be excluded

from any place on account of such advertising. Be that as it may, we refuse considerable business which does not seem legitimate. Yours respectfully,

ILLINOIS STATE REGISTER.

THOMAS REES, *Manager*.

ILLINOIS STATE JOURNAL.

Dr. George N. Kreider, Editor ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Dear Sir:—Replying to your inquiry of the third inst., in regard to the policy of *The State Journal* in the publication of medical advertisements, we have to inform you that our policy is not to publish what are known as "objectionable" medical advertisements, or advertisements of clairvoyants and others generally described under the title of "fake." We sell space to local doctors, popularly known as "advertising doctors," but reserve the right to exclude anything of an objectionable character that might be offered in their copy.

The advertising matter we publish for members of the State Medical Society is confined strictly to what is known professionally as "ethical" advertising for which the newspapers receive no remuneration.

We do not feel disposed to pass judgment upon the policy of other newspapers in publishing or refusing to publish advertisements of any kind. The daily newspapers do not all cater to the same class of individuals, and publishers' ideas of business and propriety differ widely in different offices. Very truly yours,

ILLINOIS STATE JOURNAL COMPANY.

THE CHICAGO CHRONICLE.

Dr. George N. Kreider, Editor ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Dear Sir:—In reply to your inquiry of recent date, I desire to say that it is a rule of *The Chronicle* office never to accept objectionable medical advertising. A great deal of this is presented in the course of a year, but it is invariably rejected. This applies not only to large numbers of doctors who are obviously engaged in illegal practices, but to that extensive variety of advertisers whose announcements are in themselves offensive to decency and good taste. Yours truly,

H. W. SEYMOUR, *Publisher*.

THE ST. LOUIS REPUBLIC.

Dr. George N. Kreider, Editor ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Dear Sir:—Answering your favor of the 2d inst., I have to advise you that all copy for advertising is received by the *Republic* subject to the publisher's approval and, in this reservation, all publications are carefully scrutinized for anything improper or for dishonest representations. There is no week in which some copy is not materially changed or wholly rejected. Yours truly,

A. K. HAMMOND,

Advertising Manager, St. Louis Republic.

THE CHICAGO DAILY NEWS.

The ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Gentlemen:—Replying to your inquiry of July 2d, we beg to say, that the best answer to your various inquiries is contained in the paper itself. We are sending you under separate cover a sample copy of our paper each day for one week. We have no Sunday issue. Note our "personal" column, where nothing of the objectionable sort is ever admitted. We publish the advertisements of doctors, but the copy is thoroughly and carefully edited. We have no advertising of the "get rich quick" concerns, the "wild cat mine" schemes, "clairvoyants" nor the other classification which you designate.

In the attempt to protect our readers from the dangerous speculative schemes, since the first of January of this year, we have excluded from our columns about five pages of such advertising which has appeared in other Chicago papers, a very considerable part of which has been offered to us and, in some cases, great urgency used to secure the publication. In the case of a great deal of other advertising included in this lot, while it has not been offered to us, we feel confident that we could have secured most of it, if we had been willing to have gone after it in active solicitation.

We exercise supervision and censorship over all advertisements received by us and, if they are not in accordance with our views, we return them to the advertiser, either with our refusal to accept them or with our suggestions of a necessitated change of copy. We think it the duty of a newspaper to protect its readers in connection with its advertising. We do not adopt the policy of taking advertisements indiscriminately and leaving our patrons to use their own judgment concerning them. Very truly yours,

VICTOR F. LAWSON.—*Rogers.*

THE CHICAGO TRIBUNE.

Dr. George N. Kreider, Editor ILLINOIS MEDICAL JOURNAL, Springfield, Ill.

Dear Sir:—*The Tribune* excludes from its classified columns all personals of the character referred to in *Printer's Ink*, and all medical advertising. It does not carry the advertising of any proprietary medicine which pays the internal revenue liquor tax—or which, under the new pure food law, is labeled as containing morphin, opium, acetanilid, etc. Investigation will show you that a wider variety of advertising is excluded from *The Tribune* than from any other newspaper in the country. This is in pursuance of the policy which I inaugurated some fifteen months ago and which will be fully effected before fall.

Advertising which would not be accepted by us is run in the papers to which you refer. Truly yours,

MEDILL McCORMICK, *Publisher.*

ANTI-NARCOTIC LEGISLATION IN ILLINOIS.

The legislative committee of the Illinois State Medical Society recently had a meeting with members of the Chicago Retail Druggists' Association, and considerable progress was made in formulating a law having for its object the state regulation of the sale of narcotics. The physicians present were given salutary advice by William Bodeman, ex-president of the State Board of Pharmacy. He said that the druggists would co-operate more heartily with the physicians if they, in turn, would not prescribe proprietary medicines, the contents and quantities of which they were ignorant. A joint committee of physicians and druggists, consisting of Drs. J. V. Fowler, Robert B. Preble, M. L. Harris and W. K. Forsyth, A. C. Storer and V. H. Chandler, was appointed to confer on the proposed anti-narcotic legislation which is to be introduced at the next meeting of the State Legislature.

MORAL CAMPAIGN INAUGURATED BY THE ILLINOIS PHARMACEUTICAL ASSOCIATION.

Mr. William Bodeman, of Chicago, has announced, in the Bulletin of the Chicago Medical Society, that a society on moral hygiene was originated recently in Chicago and, among other things, it was decided to publish and distribute bulletins for the education of the public. During the annual meeting of the Illinois Pharmaceutical Association, which convened at Peoria June 19-21, a motion was made and unanimously carried to aid in every possible way this social hygienic movement. It was particularly suggested that druggists should abstain from attempting to treat venereal diseases and that they were to assist in distributing bulletins to the parties most interested. Probably no class of citizens come in closer touch with offenders of this class than do the druggists, and a movement such as has been outlined by the Druggists' Association should certainly result in a movement which will be far reaching in its effects.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular meeting of the society was held June 11 at the Elks Club, with President Grimes in the chair. Those present were Drs. Ashton, Becker, Bates, Christie, Ericson, Grimes, Hart, Koch, Knapp, Nickerson, Noakes, Rice, Robbins, Rosenthal, Shawgo, K., Wells and Worley.

The committee on consolidation with the Quincy Medical and Library Association was granted further time. Dr. W. D. Walker was elected to membership. Report of Delegate Nickerson on the State Society meeting was heard and accepted. The doctor very modestly mentioned his election as first vice president of the state society. A resolution was introduced bearing on contract practice of all kinds. This matter after some discussion, was referred to a committee of three, with instructions to report at the next meeting of the society. The matter of old line and other insurance examinations was also turned over to the committee. Dr. John A. Koch was appointed as Adams County representative for the Medical Defense committee. Adjourned.

GEORGE E. ROSENTHAL,

Secretary.

The regular monthly meeting of the Adams County Medical Society was held in Quincy at the Elks Club, July 9, at 11 a. m., with President Grimes in the chair. Those present were Drs. Ashton, Becker, Center, Christie, Collins, Ericson, German, Gilliland, Grimes, Heoney, Knapp, Knox, Sierle, Liesen, Montgomery, Nickerson, Rice, Robbins, Rosenthal, Shawgo, J. B., Shawgo, K., Wells, Williams, G. G., Williams, W. W. and Zimmerman. Two applications for membership were received. Dr. E. B. Montgomery spoke briefly in regard to his European trip, during which he attended the session of the International Medical Congress at Lisbon. The sessions were successful in every respect, the foreign guests receiving much attention. Dr. Montgomery's paper on Lateral Section of the Pubes, in the section on Gynecology and Obstetrics, received its deserved share of attention and discussion.

The following resolutions were presented by a committee appointed for that purpose, the idea being to adopt them as a portion of the by-laws, if they were found suitable:

Resolved, That Article II of the appendix, known as the fee bill, is hereby amended by striking out the fourth line and substituting, "examination for all life insurance, \$5.00."

Resolved, That it is derogatory to the good of the medical profession and detrimental to the public health, for any member of this society to bid or contract for any form of medical services below the popular rates, as embodied in the official fee bill. Any member breaking this rule shall be subject to disciplinary proceedings, as provided for in the by-laws, and shall be debarred from aid and counsel of its members.

Resolved, That it is understood that "all examinations for life insurance" means both fraternal and old line companies, but not the inspection of the industrial department of any such companies.

The resolution was widely discussed, as in its present form it was not considered acceptable. It was again referred to committee for report at the August meeting. Adjourned.

GEORGE E. ROSENTHAL,

Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

A regular meeting was held June 13, 1906, with the President, Dr. C. S. Bacon, in the chair. Dr. W. C. Lusk, of New York city, read a paper (by invitation) entitled

CASE OF EXCISION OF THE RECTUM FOR CANCER, WITH PRESERVATION OF NORMAL ANUS. ILLUSTRATIONS OF SURGICAL ANATOMY OF THE OPERATION. ANATOMICAL STUDIES RELATING TO A PROPOSITION TO EXCISE RECTUM, UTERUS AND PART OF VAGINA, EN MASSE, ABOVE PELVIC FLOOR.

WILLIAM C. LUSK, M.D.

NEW YORK.

(Abstract.)

Twenty-nine illustrations were shown. The anatomical studies were made with a view of determining the possibilities of a wider removal of the pelvic tissues in cancer of the rectum. Advocates of wide local excision of cancer of the uterus are Ries, Wertheim, Sampson, Schauta and Clark; of the prostate, Young; and of the bladder, Watson.

The studies shown illustrated surgical anatomy of excision of the rectum for cancer situated well above the pelvic floor in the female, from three different standpoints, the writer emphasizing the third proposition as seeming to present the most promising possibilities towards improving the technique. 1. Surgical anatomy of the operation of excision of the rectum alone, by the combined coccygeo-perineal and abdominal routes, which was the operation performed on the case here reported. 2. Surgical anatomy relating to a proposition to excise the rectum, uterus, and part of the vagina, en masse, above the pelvic floor by the combined coccygeo-perineal and abdominal routes. 3. Surgical anatomy relating to a proposition to excise the rectum, uterus, and part of vagina, en masse, above the pelvic floor by the abdominal route.

History.—The case was one which had had symptoms for eight months preceding the operation and which presented, in the rectum, a hard ulcerated tumor situated anteriorly, its lowest palpable limit being one and one-half inches above the internal sphincter, from which level the tumor extended upwards for about four inches. Pathological report: Colloid carcinoma.

Operation, Sept. 6, 1905. The approach was through the coccygeo-perineal region and a median celiotomy wound. The former region was exposed by a horse-shoe incision, through which the coccyx was removed and the levator ani split. The sacrum was not resected. The muscular coats of the bowel were sectioned below, just above the internal sphincter, and the inner coat, after having been shelled out of the anal canal, was cut off at about the pecten. The proximal end of the sigmoid, closed with a clamp and liberated by division of the meso-sigmoid, was brought through the sphincters and sewed to the cut anal margin. The clamp was left on for a day. Course. The bowel end sloughed and the patient recovered with a stricture of the anus and a fistulous opening into the vagina.

Observations.—Microscopic examination of the specimen showed that all of the cancerous tissue was not removed. A hysterectomy in addition would not have eliminated all the disease. A wider dissection close to the pelvic wall combined with a hysterectomy and the simultaneous excision of the posterior and lateral portions of the vagina, together with the mass of lymphatic tissue connecting the vagina with the rectum on either side, seemed to be the only possible operation which could have given hope of a complete eradication of the disease in this patient.

The action of the external sphincter was in no wise impaired. The posterior horse-shoe flap, with removal of the coccyx and splitting of the levator ani in the posterior median line when the sphincters can be saved, gives a good opportunity for strong repair of the pelvic floor, maintains the integrity of the nerves of the external sphincter, and gives a line of union of the wound removed as far as

possible from the danger of any infection from the anus. If the operation of excision of the rectum be performed entirely from below, the treatment of the vascular meso-sigmoid must, of necessity, be quite in the dark, the extent of the disease cannot be properly determined, and an extensive resection of the sacrum renders liable injury to the sacral nerves as well as the subsequent occurrence of hernia. For the avoidance of these complications, the median abdominal incision seems a simple and unquestionably desirable alternative. In connection with the abdominal incision there arises the question of preliminary colostomy. If this is practiced, a subsequent abdominal incision would, of course, be interdicted. In the opinion of the writer, the intra-abdominal portion of the operation and the construction of the artificial anus at the proper situation, should be done simultaneously.

1. Surgical anatomy of the operation of excision of the rectum alone by the combined coccygeo-perineal and abdominal routes, (which was the operation performed on the case here reported). The anatomy of simple excision of the rectum was illustrated for two reasons, first, for the sake of clearly establishing the operative steps of this operation, and, second, for the purpose of comparing the amount of lymphatic tissue removed by this operation, in which the laterally entering vessels and nerves are tied and severed close to the rectum, with that removed by an operation contemplating the excision of the rectum, uterus, and part of the vagina, *en masse*, in which the laterally entering nerves and vessels are severed close to the pelvic wall.

2. Surgical anatomy relating to a proposition to excise the rectum, uterus, and part of vagina, *en masse*, above the pelvic floor, by the combined coccygeo-perineal and abdominal routes. The vessels and nerves entering the rectum and vagina laterally are isolated and tied close to the pelvic wall, through the horse-shoe opening below.

The Separation of the Ureters.—A way to do this anatomically is shown in Figures 18 to 23. Sampson has investigated the blood supply of the ureters. He emphasizes the danger of interfering with the blood supply of the ureter as a result of stripping from it diseased tissues, particularly if the arteries entering this portion of the ureter are tied. He also emphasizes the importance of preserving the fibrous sheath of the ureter.

An incision of approach to the region behind the rectum was shown, made in a line along the left side of the fifth lumbar vertebra and promontory, through the peritoneum, down upon the terminal branches of the inferior mesenteric artery. The superior hemorrhoidal artery lies upon a distinct layer of fascia, which should be carefully incised along the right side of this vessel. Through this incision, an easily separable space is entered, by the opening up of which the entire bowel, together with its vascular supply, can be separated forwards from another thin layer of fascia covering the upper portion of the sacrum and fifth lumbar vertebra, and extending around laterally over the structures of the pelvic wall. In the latter layer of fascia lie the hypogastric plexus, and the sympathetic nerves passing off to either side. If this plan of separation is followed out, the ureter on either side, lying in its fibrous sheath as it crosses the iliac vessels, is turned outwards in the peritoneum, and the internal iliac artery is easily exposed for ligaturing if desired. Care should be taken not to injure the left iliac vein, which passes obliquely across the front of the body of the fifth lumbar vertebra, lying beneath the fascia which supports the sympathetic nerves.

The Treatment of the Sigmoid Flexure.—The writer proposes a systematic method of freeing the sigmoid loop along anatomical lines. There are two structures of the meso-sigmoid which limit the distance to which the proximal end of the severed sigmoid can be carried. One of these is the entering vessels and the other is the peritoneum. Figure 24 shows how the intact sigmoid artery would prevent carrying the end of the divided sigmoid to a distance greater than the length of the vessel. Therefore, to mobilize the end of the sigmoid, this vessel must be divided. The restraining meso-sigmoid should likewise be cut on either side and this should be done near its root, so as to leave the vascular arches on the bowel side of the division, which would give the freed intestine the greatest possible chance of preserving its arterial supply. The peritoneum

should not be included within the grasp of any ligatures used for tying the vessels.

3. Surgical Anatomy Relating to a Proposition to Excise the Rectum, Uterus, and Part of the Vagina, en masse, Above the Pelvic Floor, by the Abdominal Route.—An operation of this sort appeals to the writer, from an anatomical standpoint, as the embodiment of the best technique for removal of the rectum, uterus, and part of the vagina, in cases where the bowel can be severed in healthy tissue above the internal sphincter. By tying and severing through a median abdominal incision, the structures entering the rectum and vagina laterally, out at the side wall of the pelvis, after having first separated the ureters, the rectum and vagina can with perfect ease be isolated down to the pelvic floor. It, then, would seem a simple proposition to cut the vagina across, clamp the rectum close to the pelvic floor between two angular clamps, one introduced through the vaginal opening and one from above, and to sever the bowel between them. Illustrations were presented showing how the structures entering the rectum and vagina from the side wall of the pelvis could be isolated for tying through a median abdominal incision. Edebohls successfully employed the approach by an anterior median abdominal incision for the excision of a high seated cancer of the rectum.

DISCUSSION.

President Bacon asked Dr. Emil Ries to open the discussion on this paper.

Dr. Emil Ries:—Unfortunately, I did not hear this entire paper; I only heard the last part of it. The essayist seems to accept the view of Sampson with regard to the necessity of preserving the sheath of the ureter in operations for carcinoma of the uterus. Where I have dissected out the ureter in the pelvis, I have not respected the sheath of the ureter. I have laid bare the ureter completely, up to the point where it crosses the iliac vessels. I have had only one ureteral fistula, and that closed spontaneously. According to the statement of those authors who consider it necessary to conserve the sheath of the ureter, one might expect ureteral fistula to occur in all cases where the sheath is dissected out. But such is not the case. The method which I see pointed out here seems to me to be a little less radical than some of the methods which have been followed by myself and others in so far as it leaves a good portion of stumps, whereas, I think in order to get the carcinomatous tissue in one mass, and in order not to run the risk of carrying carcinoma from cut surfaces into healthy pelvic tissue, it would be advisable to operate from healthy tissue toward the carcinomatous tissue, that is, to begin the dissection on the wall of the pelvis and work inward. If one desires to do a radical operation, with the removal of the glands, the best method is to begin the dissection over the external and common iliac arteries, and work inward, so as to get all of the carcinomatous tissue out *en bloc*.

Dr. Lusk's beautiful drawings have interested me greatly, and I shall take great pleasure in reading his paper when it is published. Had I heard the entire paper, I might be able to say more about it.

Dr. J. Clarence Webster:—The experience of those who deal with cancer of the rectum is pretty bad, inasmuch as the tendency to recurrence of the disease after removal is very great. Work such as Dr. Lusk has presented to us this evening is important in emphasizing the necessity of understanding the anatomy of the female pelvis, as a preliminary to thorough surgical work.

In regard to the extensive operation of Wertheim and Ries, I am certain that one great reason for the slowness in adopting it, is not so much the length of the procedure as the general ignorance of the anatomy of the deep portion of the pelvis, on the part of those who make a special study of this part of the body. In questioning students of anatomy regarding this matter, I have only found two who had made a dissection of the fasciæ of the pelvic floor. We know, from experience, that students do not study the pelvis as they should, consequently, the surgeon, who is not expert in the anatomy of these parts, is a little shy in carrying out extensive work which implies a thorough anatomical knowledge, and, in removing the rectum, the surgeon is apt to be satisfied with taking away the bowel, disregarding surrounding tissue. This, undoubtedly, is a

wrong procedure, and it is quite evident that this work of Dr. Lusk's is a hint in the right direction, namely, that those who wish to carry out thorough operation procedures in carcinoma of the rectum or vagina, must visit the dissecting room and work on the cadaver.

President Bacon:—We are fortunate in having with us this evening a teacher from Europe, a gentleman who is not only known as a teacher and operator, but is especially known in Europe as an authority on the pelvic connective tissue, a subject which is allied to the matter under discussion this evening. I hope Professor von Rosthorn, of Heidelberg, will favor us with a few remarks.

Professor von Rosthorn, of Heidelberg:—As I am not able to express myself very clearly in English, you must excuse me if I should fail to make myself understood.

I have taken great interest in the paper of Dr. Lusk. It comes very near to our own intentions in gynecology. It is undoubtedly known to you that we in Germany, in cases of cancer of the uterus, follow out the principle of doing more extensive work than we have heretofore done. I am glad to know that Dr. Ries, one of your members, is a pioneer in this direction. We have followed him in Europe. Wertheim, a man of very vast experience, has operated on a number of these cases, doing extensive operations. He has not only operated on a large number of cases, but he has studied all of the details of them. He has made microscopical examinations of the parametric tissue in every case, and of the glands in every case, for the purpose of determining how far the cancerous process extended, and how far it was necessary to go to remove all of the disease. He pointed out that unless an extensive operation was done in cancer of the uterus, there would be recurrence of the disease sooner or later. This was unavoidable. He has shown that most of our bad results have been due to operations not having been radical enough, particularly in cases of vaginal total extirpation of the cancerous uterus. Now, we strive to do better and more thorough work. While we have not advanced in this direction very much, we have learned a great deal about the pathology of uterine cancer. I do not suppose that there is any organ in the body which has been studied so well as the uterus in relation to uterine cancer.

It is now nearly ten years since here in America Dr. Clark did the first extensive abdominal operation for this disease, and you all know that Kelly adopted this method for a certain time, then gave it up. He returned to the vaginal operation, but now they are doing in Baltimore, I understand, all abdominal operations in these cases. This shows that we are not as yet at the end of this work. It is very essential to get these cases early, and I agree heartily with the closing remarks of Dr. Lusk, that we must have early diagnoses in these as in other cases of cancer. Cases of cancer of the rectum and of the uterus, organs which are hidden, are dangerous because, as a rule, we get them too late. Patients do not consult physicians until the symptoms of the disease are fairly well advanced. Early diagnosis will undoubtedly influence us in doing a more extensive operation to guard against recurrence.

We should remember that we are able now to distinguish between those cases in which the disease is confined to the uterus, and those in which the disease has already spread beyond that organ macroscopically, because when the connective tissue is hard to the feel, it must be cancerous. The abdominal operation is rapidly supplanting the vaginal in cases of cancer of the uterus, as more extensive operations can be done by the former route.

Another point is with reference to taking out the glands in these cases. It is difficult to do this. We can not remove all of the disease with the glands in every case; although we study them thoroughly and know the anatomy, we are not always sure that we take out all of the glands. The removal of the glands complicates the operation very materially; we have a higher primary mortality from their removal. There is no question about that.

As a therapeutic principle, however, we should take the glands out because we find them so frequently involved. I have operated on 140 cases of cancer of the uterus abdominally, and of that number about 40 per cent. showed involve-

ment of the glands in the cancerous process. That is a high percentage. Other surgeons have found the glands involved in 33 and 35 per cent. of their cases. I take it, our position in this matter at the present time is about this: In these cases where we find the uterus and adjacent glands involved, we should remove them, as far as possible. On the other hand, there are cases in which the only organ affected is the uterus, and in these we should remove as much as possible of the connective tissue in which the lymphatics are and leave the glands. Speaking for myself, in the future I am going to study, as I have been doing, the morphology of cancer of the parametria, and of the glands in every case, and considering the short time I have been working at it, I have found many interesting facts from which, with increased experience, I hope to draw some conclusions. I believe there will be certain cases of which we can say from the morphology, from the starting point, that vaginal extirpation or abdominal extirpation with the adjacent neck of tissue will suffice; while in other cases we must go further and do a more extensive operation. We must not content ourselves with taking out the connective tissue, but the glands themselves.

Certain questions have been brought before you in Dr. Lusk's paper concerning which I would like to speak briefly. Some experimental work has been done in my clinic with respect to the nerves of the bladder. We have found that resection of the nerves of the bladder in animals does not interfere with the function of the bladder. We have separated the bladder down to the urethra and all its nerve fibers and ganglia, and we have not seen the slightest disturbance of function of the bladder in animals. Again, we do not peel off the ureters of animals in this extensive operation from the sheath, as was formerly done, because we have had necrosis and fistula in several cases. Now, we leave the ureter in combination with the posterior layer of the broad ligament, and microscopical investigation of the ureter itself shows that it is rarely invaded by cancer.

Dr. Daniel N. Eisendrath:—The paper we have heard to-night is highly interesting, not only from the standpoint of the anatomist, but from that of the practical surgeon. The essayist raised the question in the beginning of his paper as to the practicability of this operation. I do not believe there is any question in the minds of general surgeons that this operation is no longer an impracticable one. It is an operation which the majority of us are performing in a somewhat different manner from that which was described by the author of the paper. The more radical of the operations which we perform at the present time for carcinoma of the rectum are based upon the principle which Professor von Rosthorn has emphasized, and that is, we take no chances as to whether the enlargement of the glands or the infiltrated tissue is of an inflammatory nature or of a malignant nature. Until we have made more exact researches of a large number of cases, such as are being made in connection with the uterus and operations on the breast, and the more radical operations which we are performing at the present time for carcinoma of the tongue and of the lips, we will not be able to draw definite and reliable deductions.

As I understood Dr. Lusk, he suggested beginning the operation from below. I believe a better method is to make the incision and begin the operation from above, and adopt the suggestion which has been made by Hartman, of ligating both internal iliac arteries. These lie alongside the ureter, and can be exposed without much, if any, stripping up of the tissues around the ureter. In this way, we reduce the danger from hemorrhage to a minimum. It is on the same principle as that followed by Crile, in his operations for the removal of carcinomatous glands of the neck. He has suggested putting clamps temporarily on the carotid arteries. We then remove the sterno-cleido-mastoid muscle and the deep lymphatics, and as much as possible of the internal jugular vein. The same principle we apply practically to our surgery of the rectum. Instead of putting a clamp on the upper end, and bringing it down toward the rectum, I believe it is better policy to ligate it with silk, because we will thereby avoid trouble later from sloughing of the proximal end of the gut. (Here Dr. Eisendrath demonstrated his method of proceeding in these cases.)

Dr. A. J. Ochsner:—The removal of the carcinomatous rectum is by this time

an old operation which has been performed by those who operate frequently a very large number of times. Dr. Lusk goes over the anatomy of this region, with its direct application to this operation very thoroughly. That is what we have found in every one of the serious operations, and only after this has happened, is the operation done as it should be. We remember what happened in abdominal hysterectomy, now that everyone is familiar with the anatomy which everyone was supposed to be familiar with before, but was not. It is, so to speak, child's play to do that operation, and so it is with prostatectomy. And so it has been with each one of these operations in succession, and so it will be now with this operation.

Of course, this paper will have to be studied very carefully in order to bring the fruit that it is bound to bring. Simply hearing a portion of it is quite insufficient to give one grounds for a proper discussion. But the principle of the thing is right. Someone has to do it, and I am very glad that Dr. Lusk has done it, and I hope many others will do the same work and enable us to clear up some of the minor points which may, even with this very thorough study, remain somewhat cloudy.

I would caution against the advice which Dr. Lusk has given of leaving a clamp upon the intestine for the purpose of preventing infection from soiling. There are two reasons why this is not good surgery. In the first place, whenever we clamp an intestine, we can not be sure as to the extent of damage which is to follow, as a result of the consequent gangrene. Secondly, intestinal obstruction, no matter from what source or what cause, is a serious matter and a condition which is liable to cause infection when one least desires it. If we obstruct the rectum in dogs, we immediately find colon bacilli in the bladder, showing that it makes the intestine permeable. The only way that infection can be avoided is by having the end project a little beyond the skin. I do not know whether Dr. Lusk stretched the sphincter muscles thoroughly before the operation or not. That should be done, in order not to have any pressure from the sphincter and muscles upon that portion of the intestine that has been brought through. Another way of overcoming that difficulty is by making a posterior incision through the sphincter, leaving only a semilunar sphincter, and depending upon the later contraction to close the posterior surface, then the recto-vaginal fistula would not have occurred, because there was posterior drainage, and then that posterior opening would readily have healed.

These are minor matters which have been discussed many times before.

We are certainly to be congratulated on having heard this splendid paper.

Dr. Lusk (closing the discussion):—I wish to say that I referred to beginning the operation from above as, seemingly from an anatomic standpoint, the most feasible thing.

The case in question had a cigarette drain behind the bowel. I thought it was due to the accumulation and pressure of a firm fecal mass after the bowel sloughed, that a fistula formed through into the vagina.

I was much interested in what Dr. Ochsner said in regard to the clamping of the bowel. I have clamped it in two cases of artificial anus without any injury, the clamp in each case having been removed when symptoms of intestinal obstruction occurred.

I wish to thank the members of the society for their kind reception of my paper and express my hearty appreciation of the discussion.

Dr. M. Milton Portis read a paper entitled

WHY GASTRO-ENTEROSTOMY IS NOT A HARMLESS OPERATION.

(Abstract.)

There has been such an appalling increase in the number of gastroenterostomies during the past few years, that in the mad rush, not infrequently the conservative indications for such a procedure have been forgotten. The interference with the physiology of digestion which such an operation entails, is not well tolerated. The work which has been recently done, especially the experiments of Pawlow and Kelling, demonstrates that the retention of the food within the acid medium of the

stomach the proper length of time, depends on a spastic condition of the pylorus due to stimulation by the hydrochloric acid. Likewise the flow both of the bile and the pancreatic juice, is brought about by a specific effect of the hydrochloric acid upon the duodenum, and upon it alone. Under condition of gastro-jejunostomy, a very small constant stream flows which is far below the demands of intestinal digestion, and as a result, the digestion of fats and albumins is imperfect and a large part is recovered in the stool. Functional disorders and severe diarrheas may come on which may prove fatal.

Near the anastomotic opening, there is not uncommonly developed an ulcer which resembles very closely the peptic ulcer of the stomach. The clinical picture is variable; either the usual picture of ulcer, or, as is frequent, no symptoms may be present until a perforation occurs.

It is seldom that ulcers of the stomach can be excised, for they are frequently multiple, and when single are usually so adherent to surrounding structures that their removal would be dangerous if not impossible. Likewise in hemorrhage of the stomach, the bleeding point or points can seldom be found and most surgeons admit that it is folly to operate while hemorrhage is actually taking place.

CONCLUSIONS.

1. The stomach may be looked upon as an organ for the protection of the bowel. The normal functions can not be improved upon by any operation, and gastroenterostomy is at all times a serious operation.

2. The functional disorders that may seriously interfere with nutrition are due not only to the premature emptying of the stomach, but also to the deficiency of bile and pancreatic juice.

3. The numerous reported cases of ulcer of the jejunum following gastroenterostomy, and their persistence of symptoms, if not fatal termination, lead us to advise the operation only as a last resort.

4. The neurasthenic individuals who suffer from chronic dyspepsia, not only are not benefited by a gastroenterostomy, but are made worse. This also applies to the dyspepsia due to imperfect mastication.

5. The so-called atonic dilatation of the stomach, and gastroptosis either alone, or as part of a general enteroptosis, never are benefited by a gastroenterostomy.

6. No operation is indicated in acute ulcer, unless perforation is imminent or has occurred.

7. Gastroenterostomy is not indicated in chronic ulcer of the stomach, unless there are repeated small hemorrhages which menace life, grave adhesions, or persistence of severe symptoms even after thorough medical treatment.

8. Gastroenterostomy should always be done where the natural evacuation of the stomach is impossible. This includes the cases with mechanical obstruction due to pyloric stenosis, and malformations of the stomach due to hour-glass contractions or disabling peri-gastric adhesions.

DISCUSSION.

Dr. Arthur R. Elliott:—Dr. Portis has very clearly defined the disadvantages of the operation of gastroenterostomy, and has detailed the indications for its performance. The validity of his objections to the operation can hardly be questioned, since they are founded on well established physiology, and on the results of experimental observations. It seems to me, however, that it is only common justice to the operation to offset these considerations. The testimony of those experienced in the performance of plastic work on the stomach is, I think, in accord as to the ultimately good results following gastric drainage. Wathen, in the *Journal of the American Medical Association* a year ago, quoted ten of the most prominent surgeons engaged in this work, all of whom unite in claiming excellent ultimate results. This list includes such names as Robson, Moynihan, von Mikulicz, Kocher, Czerny, and in this country, Murphy, Ochsner, Mayo, Deaver, and Park. It is unlikely, therefore, that the considerations which Dr. Portis has so clearly stated will stand against the necessity for operation in cases which fall within the category of clearly defined indications, such as cases of carcinoma, pyloric stenosis, hour-glass stomach, etc. They do, however, militate

seriously against the performance of gastroenterostomy in cases of functional disturbance. With gastroenterostomy, as with other new methods which have been introduced into surgical, and eventually into medical work, there are radical spirits who are carrying this question of gastroenterostomy too far. This is the case even with men whom we are justified in looking upon as conservative. I quote the following recent instances: Moynihan, in the *British Medical Journal* of September 3, 1905, advocates operation in cases of chronic inveterate dyspepsia, without any care to designate the type of dyspepsia he refers to, or apparently without regard for the large number of functional perversions that give rise to chronic dyspepsia. Hartmann, of Paris, recommends operation for the cure of hyperacidity, with recurrent pyloric spasm. In a prominent medical journal in this country within the last two months there has appeared a report of two cases of gastroenterostomy performed for simple chronic indigestion. This man, who is an excellent operator and prominent in the West, reports these apparently as triumphs of surgery. The patients are said to have made uninterrupted recoveries and have been relieved symptomatically, but it does not seem to me as if experience will justify such heroic measures for the cure of dyspepsia.

In the Section on Practice of Medicine of the American Medical Association held last week in Boston, a speaker advocated the employment of drainage of the stomach in cases of hyperchlorhydria which were obstinate to treatment. When we consider that 50 per cent. of all the cases of chronic dyspepsia, which come under observation, are cases of hyperchlorhydria, and that practically every neurasthenic or hypochondriac, and most cases of tabes have hyperchlorhydria, it reduces the matter of gastroenterostomy in functional gastric disorders to an absurdity. If this advocacy of gastroenterostomy for dyspepsia demonstrates anything, it seems to me it demonstrates that our methods of gastric diagnosis and of gastric treatment for the cure of dyspepsia are carried out imperfectly by the average physician. Good results can be secured under medical treatment, provided it is carried out with sufficient patience and experience, and I say this without any reflection on the brilliant results occasionally secured by operative measures. It is time for us to raise the question of the advisability of gastroenterostomy for the cure of neuroses and functional perversions of the stomach.

Dr. Alfred C. Croftan:—While there are many conditions that lie on the borderland between internal medicine and surgery, in considering this question we should conservatively occupy the middle of the road and stand pat. I think the objections to promiscuous gastroenterostomy on varied mechanical grounds, as enunciated by Dr. Portis, are well taken. There is a clinical side to this question which leads me rather reluctantly to incline a little toward the surgical side in this sense, that frequently it is a matter of impossibility to make a clean-cut diagnosis of a stomach disorder until we have made a hole in the abdomen and have looked at the stomach. That applies in particular to early carcinoma. The more I work in this line, the more I am in accord with other internists and the more skeptical I become with regard to the relative value of chemical stomach analyses in the diagnosis of early carcinomatous conditions. I am rather inclined nowadays to reverse the proposition, so that if I want to diagnose carcinoma, unless I feel a tumor, I am uncertain as to the diagnosis, and even then I am not always quite sure. If a patient has no free hydrochloric acid, but has lots of lactic acid, has the Boas-Loeffler bacillus, and the other things, I am exceedingly afraid to tell a patient that he has nervous dyspepsia, or that he has no organic disease of the stomach simply from an analysis of the stomach contents, because I have seen cases within a month or two months after I said to myself, and with certain reservations to the patient, that he did not have organic disorder of the stomach, develop carcinoma, basing my original opinion on the presence of free hydrochloric acid and more or less normal stomach contents. I lean toward the surgical side in some of these cases without taking the trouble of making a complete stomach analysis, and gastroenterostomy is sometimes undertaken for reasons which are obscure to me, and when this operation is done the patient has at least the benefit of an exploratory incision. If gastroenterostomy is performed by a skillful surgeon, no harm can accrue from it in most cases,

and if it should be one of those cases in which early carcinoma was not discovered, by ordinary medical means, much valuable time will have been saved by an exploratory laparotomy, and the surgeon may decide not to make a simple gastroenterostomy, but excise the beginning carcinomatous tissue.

Dr. A. J. Ochsner:—I dislike very much to take part in all of these discussions, but as Dr. Elliott has referred to my writings on this subject, I will say that I have followed the conclusions that were given very carefully in the paper, and with the exception of the first conclusion, which might be misleading, I believe that all of them are correct.

Gastroenterostomy is admissible only in case of obstruction to the pylorus, either due to carcinoma or to a small ulcer in the pylorus, giving rise to closure by spasm, or because of an obstruction due to the presence of an indurated ulcer in the region of the pylorus. Virtually, those are the two reasons given in the conclusions of the essayist, and they are proper reasons. We must remember that at the present moment, of all the end results that are unsatisfactory after gastroenterostomy, the vast majority come to the internal practitioner, so that he is bound to see the bad results, the results in our unsatisfactory cases. On the other hand, we must also remember that all of the good results of the internal practitioner are not seen by the surgeon. Whenever the internist has permanently cured an ulcer of the stomach, then we as surgeons never see that case. We only see a case that has been cured, and has relapsed, has been cured again, and has relapsed, so that our basis for judgment of the results of internal treatment is not a good one; neither is the basis that the internist has as to the results of surgical treatment proper, because the patients that are actually and permanently relieved by operation will not require further stomach treatment. But there are many such cases that are not relieved by this operation, and there are very good reasons for it. In the first place, no surgeon who has performed a large number of these operations is satisfied with the operations he performs. One of the most skillful, most learned and most experienced of all stomach surgeons, Dr. Mayo, of Rochester, made this statement a few days ago, that so far he had never published an article on gastroenterostomy, in which this treatment was satisfactory by the time the article appeared in the journal to which it was sent. In other words, we are not satisfied with the operation, and it will be a considerable time before we will be satisfied with it. It is different from the operations that are settled. When we talk of herniotomy, we know that we are satisfied with it. We talk of many other operations and know that our results are good because we have reached a point at which we have a proper operation from every point of view. As to gastroenterostomy, we are satisfied with it for the present; we do not grumble over the operation of the past, because it was better than no operation, but it is not the operation of to-morrow, and the principles which were laid down in the paper are perfectly correct. We have to drain the stomach. We have to make gastroenterostomy under certain conditions; but the results can not be good in all of the cases.

There are a few things in the article with reference to peptic ulcer which should be observed, but I will not occupy any more time.

Dr. Emil Ries:—It may be of interest, in connection with this discussion, to report the case of a woman upon whom I operated this morning. A year ago she weighed 200 pounds. She began to have trouble with her stomach two years ago. In October, 1905, she was examined by an internist, who made a diagnosis of functional trouble. In November she was examined by another prominent physician, was treated at the hospital for three or four weeks, during which time repeated examinations of the stomach contents were made. After a diagnosis of functional trouble she was sent to a sanitarium, sent to another hospital, and ultimately landed in my hands a few days ago, after she had lost 100 pounds. She had pain in the stomach, was cachectic, and presented the picture of a case of carcinoma. A tumor could not be felt. I made no attempt to draw conclusions from analyses of the stomach contents, as they had evidently entirely misled two men, who examined her carefully. I preferred to make an incision, which I did this morning, and found carcinoma in the pyloric region about as large as

my fist, ulcerated, and the bottom of the ulcer was attached to the left lobe of the liver, so that I had to be satisfied with a gastroenterostomy. Why do I report this case? Because this woman had a diagnosis of functional trouble made of her case several months ago by competent men. These examinations were made by the most approved methods, and yet the diagnosis was absolutely wrong. That point has to be emphasized in particular. With reference to operating on the stomach, the greatest difficulty we have is not with the technique of the operation, but in making a correct diagnosis, and I wish to add that this difficulty obtains not only before, but during operation. While it is considered very easy by some to make an incision in these cases, it is not quite so easy to say what the trouble is after the abdomen is opened.

I exhibited a case before this society, some five years ago where a diagnosis of carcinoma was made by competent men; where a tumor could be palpated, where hydrochloric acid was absent. The woman had lost 50 per cent. of her former weight, and it was a question whether she would survive an operation. On examination we found a large tumor occupying the pyloric half of the stomach. In that case I resected two-thirds of the stomach, did a gastroenterostomy, closed the duodenum, and she recovered. She now weighs 135 pounds, having gained 100 per cent. On opening the abdomen I could not tell from the specimen without a microscopical examination whether the tumor was carcinoma or not. It is a fact, that, on entering the abdomen, we may find a tumor which looks like a carcinoma, and in addition to the tumor, the characteristic additional signs which we use in differentiating between a benign and malignant tumor. I refer to involvement of the glands. I have operated on a number of stomach cases, where investigation of the glands contained in the mesentery and in the omentum has revealed them to be enlarged, and where the tumor was carcinoma. Still, the glands may have been free from the disease, and were free in one case I reported. In other cases there were enlarged glands, with tumor of the stomach, an entirely benign condition of that organ, and the glandular involvement was misleading. I wish to emphasize the point, that a great many who undertake gastroenterostomy as an easy operation may be misled by the appearance of the glands, and also that it is not so easy to diagnose the nature of the tumor without the microscope.

The title of Dr. Portis' paper is, Why Gastroenterostomy is Not a Harmless Operation. I would like to discuss for a moment why gastroenterostomy is an insufficient operation in many cases. Sometimes it is not harmless, because it is not a sufficient operation. Dr. Portis mentioned cases in which gastroenterostomy has been done for bleeding gastric ulcer, the patients dying from hemorrhage after the operation. There are other conditions which obtain after successful gastroenterostomy which lead to the death of the patient. I refer to cases where gastric ulcer has perforated eight and twelve days after a successful gastroenterostomy. I can refer also to cases where the ulcer ultimately proved to be or developed into carcinoma, where early operation was resorted to, but in which gastroenterostomy was not a harmless procedure because it was insufficient, where resection ought to have been done instead of gastroenterostomy.

Apart from the points mentioned, Dr. Portis' paper is an exceedingly timely one. I see a number of cases that have had stomach operations and who are not a whit better than before these operations. The kind of cases that come to me afterwards are especially those women who have been told that they ought to have their cystic ovaries treated, and in many cases I think gastroenterostomy is done on the same plan or principle as a cervix operation, a retroversion operation, and a floating kidney operation. Gastroenterostomy is seemingly such a safe operation that patients undergo it and recover from it, the mental impression of the operation being very great, in the same way in which an operation for lacerated cervix produces a mental effect on the patient. But though the patients recover from the operation, they are not cured. A great many neurotics who need treatment of their nerves are undoubtedly operated for stomach trouble, when in reality it would have been better for them to have gone to a competent neurologist. That leads to the question of diagnosis before

operation, and it is the hardest question for us to settle. We have to work together to develop our knowledge of this part of surgery and of general medicine, and the more frequently the internist looks into the abdomen when it is open, the better will the surgeon and the internist get along together, and the more frequently will such cases as the first one I reported, of diagnosis of functional trouble subsequently proving to be carcinoma, be avoided.

Dr. Portis (closing the discussion):—In summing up, I tried to be fair to both surgeons and internists. It was after weighing many hundreds of operations, searching out the indications and trying to follow the postoperative results, I drew these conclusions, and tried to emphasize them from the chemical and physiologic side. I may be wrong in detail about some of the conclusions, yet I believe most of them are accepted by many of the eminent men working in this particular department. I think the objections and criticisms of one or two of those who discussed my paper are not objections really to the conclusions or statements that were made, but rather pointed to the deficiency of our knowledge in this particular department, as in other departments of medicine.

Whether or not gastrojejunostomy will remain as the best operation of the future, I am satisfied that some type of operation of that sort will always be done for these conditions, but only when it is strongly indicated.

I wish to thank the gentlemen who were kind enough to discuss my paper.

Drs. Emil G. Beck and John A. Ospray read a joint paper, entitled, Tracing of Fistulous Tracts by Radiography.

DISCUSSION.

Dr. Heliodor Schiller:—I would like to ask Dr. Beck if it is not possible that the bismuth may enter the loose connective tissue and give one the idea of a fistula where no fistula is present? The tissue around the fistula is usually infiltrated and eieatrized, but in some places there may be leakage, and it would be easy for the bismuth to go through the loose connective tissue and give a wrong idea of the branches of the fistula.

Dr. Daniel N. Eisendrath:—This method is a great aid to surgeons in a more or less limited field. That field is one which Dr. Beck has brought up, namely, the tracing of the sinuses, such as may result from tubercular spondylitis and from bone processes.

A better method in my opinion is to trace the direction of the fistula by injections of colored fluid. In tracing the direction or extent of an abdominal or thyroglossal sinus, a branchial fistula, or, still better, a fistula in the ischio-rectal region, we often wish to know in which directions the various branches of the fistulae go. This is done by injecting either methylene blue, gentian violet, or some other colored fluid. These will stain the entire lining of the fistula and will enable us to follow it out, at the time of the operation, in a few seconds.

Dr. Beck (closing the discussion):—In reply to Dr. Schiller's question, I will say that if the fistula is persistent for some time, its walls will be harder than the material which is injected, so that there will be no loose connective tissue in those fistulae. They are lined with smooth surfaces. I do not think the bismuth would penetrate an old fistula.

In reference to the remarks made by Dr. Eisendrath, I will say that the injection of colored fluids is useful and is an aid, and so is this an aid. One is not intended to displace the other; both will throw more light on the subject and give us greater aid than one alone.

CHICAGO SURGICAL SOCIETY.

Stated meeting, April 6, 1906. The president, Dr. D. A. K. Steele, in the chair.

TABETIC DISEASE OF THE KNEE JOINT.

Dr. Daniel N. Eisendrath presented two cases of tabetic disease of the knee joint, one in a woman, aged 45, and the other in a man, aged 60. In both cases the most marked pathological feature was the enormous enlargement of the lower end of the femur, as shown by the x-ray. In one case, this was so marked as to simulate an osteosarcoma of the lower end of the femur. This latter patient had been sent to him with such a diagnosis. Examination of the patient, however,

confirmed the diagnosis of *tabes dorsalis*. Another interesting feature of both cases was a marked increase in lateral mobility, especially in an outward direction. This was due to the enormous distention of the capsule, and subsequent stretching of the ligaments. Operative treatment had been advised in both cases on account of this laxity of the joint. Resection of the ends of the bones was indicated in preference to amputation above the knee. A number of cases have been reported in which such typical resections have resulted satisfactorily. Dr. Eisendrath also showed a patient upon whom he had performed nephrectomy for unilateral septic nephritis.

THE TECHNIQUE OF OPERATIONS UPON THE HEAD AND NECK.

Dr. George W. Crile, of Cleveland, Ohio, read a paper, by invitation, on this subject. He said the principal objects sought to be attained in the majority of operations are, a clear field at every step in the operation, the minimizing of hemorrhage and shock, the accomplishment of the particular purpose of the operation, and the avoidance of complications. Hemorrhage should be treated from the separate standpoints of arterial and venous. In the first stage of the operation for excision of the Gasserian ganglion, arterial hemorrhage is of paramount importance; in the second stage, venous. In the excision of a goitre, venous hemorrhage is more important than arterial. In most operations both factors are present. Surgical practice is at present divided as to the best means of controlling each. In one clinic, the patient is operated in the head-up posture; in another in the inclined head-down posture; in another in the horizontal. Some surgeons, in important operations, place a permanent ligature upon the external carotid, others apply methods of temporary closure, while still others depend upon local hemostasis, without any control over the main blood supply. One still sees the practice of the older surgeons, consisting of a dashing operation, followed by quick packing and securing of vessels, disregarding for the moment the loss of blood. Obviously, the methods of control of the arterial and venous hemorrhage are almost diametrically opposite each other.

He first considered the control of the arterial hemorrhage. Four distinct methods may be contemplated. First, that of head-up posture, thereby diminishing the blood pressure and the flow of arterial blood to the operative field. This method is helpful, but, as frequently practiced, if the patient be under full anesthesia, is attended with the danger of sudden and not easily controlled cerebral anemia, besides, the control of the circulation is in many instances not sufficient. If the patient be not under full surgical anesthesia, the surgeon may be seriously hampered in his efforts at a precise dissection. The risks on the one hand and the shortcomings on the other leave much to be desired by this method.

He next considered permanent ligature of the external carotid artery. A study of the literature of the subject will show between two and three per cent. mortality rate from cerebral embolism alone. In many cases of malignant diseases of the neck, the exposure and tying of this vessel requires dangerous handling of malignant tissue. The definite and needless risk of cerebral embolism, and its contraindication in many malignant diseases, handicapped this procedure seriously.

In the third place, he discussed the control of hemorrhage from point to point by means of artery forceps. By this method, a comparatively bloodless operation may be performed, but the objection to its employment is the laborious task of picking up such a large number of vessels in the major operations on the neck requiring such an increased length of time that it becomes a factor in the production of shock.

Fourth, he took up the temporary closure of the common carotid or the external carotid, with the head-up inclined posture, as aimed at in each vessel as it appears. This method embraces the head-up posture of the three preceding. The vessel is closed only temporarily; the anemia, which is maintained, usually a certain precaution against cerebral anemias would be discussed later; and all vessels that under these conditions upon the head are secured at each point in the dissection. In certain operations upon the scalp, in which the division of this tissue is extensive, the blood supply is abundant, and, perhaps, in addition, it is very desirable to maintain a dry field, a very satisfactory anemia on the plan

of the Esmarch bandage may be obtained by the use of a double layer of rubber dam, applied snugly upon the entire scalp, covering every part of the head and rendering the scalp completely bloodless. The free end may be tucked under, like the application of a turban, and the incision may then be made through the rubber dam, the latter affording a splendid protection of the operative field. This is in many respects more practical than the elastic tourniquet placed around the base. Aside from the use of a rubber dam turban we have no other means for general purpose for the control of the venous hemorrhage than that of the head-up posture.

In operations upon the mouth, including such as excision of neoplasms of the jaw involving the mouth, of the buccal mucosa, of the floor of the mouth, of the tongue, of the hard and soft palates, of the tonsils, and in cleft palate operations, a simple method of tubage of the pharynx, heretofore described by the author, but more recently elaborated, has proven most satisfactory.

DISCUSSION.

Dr. Arthur Dean Bevan saw Dr. Crile operate on a neck case a short time ago in Cleveland, when he employed the general technique he had described, such as the elevated position of the patient's head, with rubber suit, etc., and with this elevated position of the patient's head he was sure that the field of operation was maintained in a condition where there was much less blood, where the dissection was much easier than in any case of neck work he had ever seen. He had been very much impressed with one point in connection with carcinoma work, generally about the face and head, and that was the desirability of ligating the external carotid. He had been a little afraid to interfere with the common carotid, but almost a routine in his work, he had ligated the external carotid in extensive malignant disease of the face, with some considerable satisfaction.

Dr. E. Wylls Andrews had known about the temporary clamping of the carotid artery for several years, but had never dared to resort to it himself, because he had not actually seen it used. It was perfectly obvious that Dr. Crile had started out in a direction, where there was absolutely no precedent, in the kind of work he was doing on the head and neck. He had created a new field of surgery here. Anyone who would review the literature of the last two years must come to the conclusion that it was almost revolutionary. The comparison that Dr. Crile made with the Halsted operation on the breast and his operations upon the neck explained a great deal. The radical breast operation, as advocated first by Willy Meyer, and later by Halsted, put breast surgery in a new status, and Dr. Crile had created a new surgical status for the neck and head. The speaker had tied one of the carotid arteries many times, dissecting half of the jaw or face, cutting down, and thinking that the only way to make the operation feasible was to tie the common carotid, thereby getting a high mortality, but finally ending by doing no such radical and successful work as had been accomplished by Dr. Crile in the remarkably ingenious steps which he had described.

Dr. A. J. Ochsner said he also saw some of the early work of Dr. Crile in this field. Since that time, he had employed Dr. Crile's clamp in a number of operations, and had used the position which he had demonstrated, and had borne in mind one of the features which Dr. Crile pointed out at that time very forcibly, but which he only hinted at now, especially in operations for the removal of portions of the thyroid gland in cases of exophthalmic goitre. In that particular line of cases, it was of especial value, namely, after thoroughly anesthetizing operation, one elevates the head and leaving the patient in this position during the anesthetic. The head readily complete the operation without any further use of the position, would cause the amount of anesthetic which had been given previously to suffice for the entire operation.

Dr. M. L. Harris said that a thorough knowledge of the lymphatic glands and of the territories which were drained into certain lymphatic areas was of great importance. This was nowhere better shown than in the difference in mortality rate from metastases, which are found in cases of carcinoma of the lip and of the tongue. It had long been known that carcinoma of the tongue was much more

malignant than carcinoma of the lip, and that operations for the removal of carcinoma of the tongue were much less successful than those for the removal of carcinoma of the lip. This was due largely to the lymphatic distribution. He emphasized the importance of removing the jugular vein in malignant disease in these cases. This was again impressed upon him recently. Two weeks ago, he did an operation for carcinoma of the larynx, removing the glands in that vicinity. In removing the metastases in the glands of the neck he had to take away also all the vessels, namely, the common carotid, the external and internal carotids, and the internal jugular vein, in one mass.

Dr. Daniel N. Eisendrath asked Dr. Crile the following questions: First, after releasing the clamp following the temporary closure of the common carotid artery, to what extent did hemorrhage follow the taking off of the clamp again from the terminal branches of the artery? Second, in what percentage of his cases, if any, had there been cerebral embolism, following temporary ligation of the common carotid? Third, had he ever performed a preliminary tracheotomy or tracheotomy at any stage at the time of the operation, or, say a week before, as a preliminary step?

Dr. D. W. Graham said, with reference to the removal of the jugular vein, he had been accustomed, when he wanted to dissect out a carcinomatous mass in this region, to cut the vein and muscle just below the tumor, and following down towards the clavicle, as far as was necessary, then ligating below, and turning the other end up with the tumor as high as it was deemed necessary to go. In these cases, he had observed that the lumen of the jugular vein was sometimes obliterated, and frequently partially obliterated, so that, beginning there, it was probably easier to remove the vein down from that point than it would be to start just above the clavicle, although he could see how Dr. Crile's method might be better in some instances.

Dr. Crile, in closing the discussion, and replying to the questions of Dr. Eisendrath, said that it was interesting to note that there was very little hemorrhage after the clamp was taken off. He had never seen a case of cerebral embolism following his method. However, if one squeezed the clamp or clamps too tightly, there might be the possibility of the formation of the embolus. Particularly would a thrombus be likely to be produced, and later embolism, if one were rough in his manipulations. He had not for some time resorted to a preliminary tracheotomy. He followed the teaching of some of his colleagues in putting patients in the upright position as early as possible after operations. In conclusion, he emphasized the point that it was much easier to do the larger operation than the smaller one.

Dr. Norman Kerr read a paper entitled Combined Superior Tibio-Fibular and Astragalo-Fibular Osteoplasty as a Means of Preventing Shortening of the Leg During Adolescence Following Extensive Osteomyelitis. The author reported a very interesting and instructive case at great length. The paper was discussed by Drs. William M. Harsha, A. J. Ochsner, E. Wyllys Andrews, and the discussion closed by Dr. Kerr.

UNIQUE PATHOLOGICAL CURIOSITY.

Dr. William Hessert exhibited an unique anatomical specimen. He had operated upon an infant, five days old. The history was that the baby had not had a bowel movement since birth, and the attending physician had informed him that at birth there was no escape of the meconium. The patient showed the typical symptoms of intestinal obstruction, vomiting, distended abdomen, etc., and was in a low condition. On opening the abdomen, dilated coils of intestine presented, and, in following them down, he found that the ileum ended below in a blind pouch. It was much larger then than it is now. It was filled with feces to almost the size of one's fist. There was no connection between the ileum and the colon. The ileum ended in a blind pouch, and the colon was to the right, greatly contracted. It was impossible to make any sort of anastomosis between the ileum and colon. He opened the blind pouch, allowed the gases and feces to escape, and then sutured it to the abdominal wound. The child died the next day.

Dr. M. Reichmann exhibited skiagrams of interesting cases.

A regular meeting was held May 4, 1906, with the president, Dr. D. A. K. Steele, in the chair.

SYPHILIS.

Dr. Edward H. Ochsner showed a patient to illustrate the fact that the statement, commonly made in textbooks, that potassium iodid, when given in sufficiently large doses, proves or disproves the presence of syphilis, is not necessarily correct. He mentioned several syphilitic patients, who had previously received very thorough treatment with potassium iodid, without benefit. The patient shown was referred to him by a prominent practitioner, who had treated the patient with potassium iodid and intramuscular injections of bichlorid of mercury on the theory that the patient was syphilitic, but as the progress of the disease did not seem to be retarded in any way, he had begun to doubt his original diagnosis. The lesion which involved the nose was so typical of tertiary syphilis that there was no doubt as to the diagnosis; consequently, the patient was put on fumigation treatment with calomel, and potassium iodid internally, with the result that the lesion rapidly improved, and with the exception of a slight persisting deformity, the patient appears to be cured.

DISCUSSION.

Dr. Arthur Dean Bevan inquired whether the fumigation treatment of syphilis is appropriate in all cases. He said that in some cases one method is successful, while in other cases another method of treatment will achieve results. Cases of advanced syphilis would clean up very rapidly under four or five grains of potassium iodid daily, particularly those who were not affected by eighty or ninety grains a day. Some of the tertiary forms of the disease clean up more rapidly under the mixed treatment than under either potassium iodid or mercury.

Dr. L. A. Greensfelder suggested that the proper dose of potassium iodid is the one that produces the physiologic effect, no matter what the size. Until that effect appears, it is impossible to say that the patient had received a sufficient dose. The intravenous injection of a one or two per cent. solution of bichlorid directly into a vein, giving one or two c.c. every day for fifteen or twenty days, is quite efficacious in these cases. He used that method in cases that were under the potassium iodid treatment, and also under the intramuscular injection treatment, and in which no effect was produced. After three or four intravenous injections, the result was quite prompt.

Dr. William Hessert also recommended the intravenous injection method. He now has under his observation a patient who had been treated by all other known methods without result. After about half a dozen injections of 3 c.c. of a one per cent. solution of bichlorid, a very satisfactory effect became evident. The lesions on the skin and elsewhere, which had been very marked, disappeared rapidly.

Dr. Ochsner, in closing, concurred in the remarks of Dr. Bevan, that a method which fails in one case may succeed in another. The fumigation treatment is not a specific for all cases of syphilis, but his experience has taught him that every case that has resisted the potassium iodid, or even the mixed treatment, has responded to fumigation. He would not give an intravenous injection of mercury or any other drug, until he had tried all other and simpler methods of treatment.

NEPHRECTOMY FOR TUBERCULOSIS OF THE KIDNEY.

Dr. William Hessert reported a case of tuberculosis of the kidney in which nephrectomy was performed. The patient made an uneventful recovery, and has since regained her health and increased in weight. The case was discussed by Drs. Bayard Holmes, D. N. Eisendrath and L. L. McArthur.

TUMOR OF JAW.

Dr. L. L. McArthur reported the case of a man, 42 years old, who, eighteen months previously, noticed a tumor in the lower jaw, beneath the left first molar tooth. This tumor involved the alveolar process and body of the bone. It gradually increased in size, becoming about two inches long and 1¼ inches thick. A dentist removed the tooth, which gave very little relief. When the tumor enlarged again, the man went to a physician who lanced the growth. A thick, clear fluid,

mixed with blood, poured out. This was repeated at intervals seven times, with the same result. Pus was never seen. Finally, the tumor increased so much in size that its removal became necessary. The speaker described the operation he did in this case, and said that the tumor he removed was one of those rare forms of odontoma classified as adamantinoma, taking its origin from portions of the teeth buds, and the character of the growth varied with the character of the primary portions of tooth structure which took part in the development of a tooth. Microscopically, on superficial examination, the specimen resembles an epithelioma, but the growth never causes any pain, nor, once well removed, will it recur.

HEMANGIOENDOTHELIOMA.

Dr. McArthur also showed a specimen which he obtained from a case of apparent recurrence of a carcinoma of the breast, in the axilla. The recurrence took place about three months after the breast had been resected. The tumor was of considerable size. The x-ray proved ineffectual. Clinically, the tumor presented all the characteristics of a recurring carcinoma. On microscopic examination of the original tumor, it was pronounced a sarcoma. However, the pathologist pronounced it an endothelioma of the perivascular type, a hemangioendothelioma.

Dr. Thomas L. Gilmer thought that the case of tumor of the jaw, reported by Dr. McArthur, taught a valuable lesson. It showed that surgeons should not be too hasty in advising removal of the jaw or sections of it, especially of the mandible, because it produces a very serious deformity, one which is remedied only with difficulty. He referred to several cases of tumor seen by him, odontomas and cyst-like tumors, one of which contained a number of denticles or imperfectly developed teeth.

Dr. D. N. Eisendrath called attention to an article by Bloodgood, in *Progressive Medicine*, of December, 1905, describing a case of tumor of the jaw producing enormous enlargement, which he termed a cystadenoma, which Bloodgood thought is probably the best name for this class of tumor. These tumors are comparable to those occasionally occurring in the ovary. He considered Dr. McArthur's case interesting, because there was only one cyst, whereas in the other cases published there had been multiple cysts, each cavity being lined by a membrane similar to the one in Dr. McArthur's case.

SARCOMA OF THE THIGH.

Dr. A. J. Ochsner reported a case of this kind and showed the leg which had been removed that day. He made use of a method which he said is exceedingly simple and effective. It is a revival of a method in almost universal use fifty or sixty years ago. He read a number of reports of hip joint amputations, which were published in *Virchow's Archiv* about the middle of the last century, which seemed to be so uniformly favorable that he concluded to give the method a trial. It consists in ligating the femoral vessels primarily, and then grasping the other vessels as the dissection is proceeded with. The hip can be amputated in a short time with the loss of almost no blood. The sciatic and the anterior crural nerves in this case were injected with cocain.

A regular meeting was held June 15, 1906, with Dr. D. A. K. Steele, the president, in the chair.

CERVICAL RIB.

Dr. William Hessert showed a girl, aged 16, who had applied for treatment of a fracture of the clavicle. On examination, a bony tubercle was found over the inner aspect of the clavicle. This tubercle was the anterior extremity of a bony process which could be followed by palpation backwards and inwards. X-ray examination showed a cervical rib.

CARCINOMA OF THE THYROID GLAND.

Dr. A. E. Halstead reported a case of carcinoma of the thyroid gland in a man, 42 years of age, with a negative personal and family history, who had had an enlargement of the neck for about eleven years. During the past few years the tumor had increased in size considerably and other tumors appeared in the neck region. The dyspnea finally became so severe that an operation was necessary.

The operation was done under local anesthesia and all the masses were removed. Microscopic examination of the cervical lymph glands showed an adenocarcinoma. Besides the carcinomatous growth, the tumor mass itself showed nearly all the varieties of goitre, including hypertrophy, colloid degeneration, cysts, calcareous deposits and bone. The patient made a good recovery.

DISLOCATION OF THE METATARSAL-PHALANGEAL JOINT.

A man, aged 18, had his foot caught in an elevator, causing a dislocation of this joint of the big toe, and fracture of the second tarsal bone, as well as Potts' fracture. Several attempts were made to reduce the dislocation under anesthesia, but all failed. Finally, an open operation was done, and the dislocation was reduced. It was found that it was not the short flexor but the long flexor which had become lodged between the head of the metatarsal and the base of the phalanx, and was preventing reduction. As soon as the long flexor was pulled out with a blunt hook, reduction was accomplished without any difficulty.

Dr. E. W. Andrews reported a parallel case of dislocation of the thumb, in which he made a small incision and by prying with a flat director he managed to slide the phalanx on to the metatarsal, where it stayed. He also referred to a case of tubercular degeneration of the thyroid. The patient had several tubercular glands in the neck, and then developed a small cold abscess in the thyroid. After pulling out shreds of thyroid tissue for several weeks, he finally enucleated the whole gland as a necrotic mass. The patient developed symptoms of myxedema and later died suddenly.

Dr. D. A. K. Steele reported a case of dislocation of the metatarsal-phalangeal joint of the big toe following an elevator accident. Repeated attempts by a local physician to reduce the dislocation, even under anesthesia, had failed. Recognizing the irreducibility of the dislocation, Dr. Steele did an open operation, and found that it was the long flexor that was lying between the bones and prevented reduction. Even strong leverage failed to effect reduction until the tendon of the long flexor was withdrawn, when reduction was effected very easily.

INTESTINAL OBSTRUCTION FROM MECKEL'S DIVERTICULUM.

Dr. William M. Harsha reported this case in a woman, aged 37, and detailed the history of the case and described the operation. He likewise reviewed the literature. He also reported a case of gangrene of the leg, following rheumatic endocarditis. In this case amputation became necessary. The patient was a woman, 52 years of age. His conclusion was that there were vegetations of thrombi about the valves, as a result of the endocarditis which became dislodged and probably occluded the lower end of the popliteal at the bifurcation. He also reported a case of spontaneous fracture of the fibula, followed by amputation.

Dr. A. E. Halstead stated that statistics showed that next to intussusception, obstruction from diverticulum is the most common form of obstruction of the bowel. The statistics of Liechtenstein showed that 39 per cent. of obstructions are caused by intussusception, and 6 per cent by diverticulum. Dr. Harsha's case was interesting, because the constricting band had been present from birth and did not produce obstruction for many years. The immediate cause of obstruction was undoubtedly some acute distention of the bowel above the point of constriction, which happens frequently in these cases, especially when the loop of bowel is suspended by a diverticulum from the umbilicus. He thinks it is a mistake not to remove a diverticulum. There are on record some thirteen or fourteen cases of obstruction occurring from invagination of the diverticulum.

SARCOMA AND MYOMA OF THE STOMACH.

Dr. John L. Yates, of Milwaukee, Wisconsin, reported five cases of sarcoma and myoma of the stomach. Three of the cases, which occurred within nine months in the clinic of Dr. Ochsner, illustrated the early development of a myoma, as well as the two main clinico-pathological groups into which primary gastric sarcoma may be divided, the one clinically indistinguishable from carcinoma, the other relatively benign and at times capable of preoperative recognition.

Dr. A. J. Ochsner said the fact of finding three tumors of the stomach that were not carcinomatous, within so short a time, tended to show that these tumors

are much more common than was formerly supposed, and that tumors which are sarcomatous or myomatous may be diagnosed as carcinomatous. This seems to be important from the fact that the stomach was fairly well protected against the transmission of sarcoma to the surrounding tissues. A sarcoma seems to remain more limited than does carcinoma, so that the end results should be better after gastrectomy in sarcoma than in carcinoma.

Dr. A. E. Halstead cited the case of a young man, seen a few years ago, with a movable tumor of the stomach. He had no stomach symptoms, except epigastric soreness occasionally. He operated on the man and found a pedunculated tumor of the size of a small orange, which resembled a foreign body more than a tumor. The tumor was attached to the smaller curvature. The portion of the stomach giving attachment to the tumor was excised, and the patient made a complete recovery. The patient disappeared, so that it was impossible to learn whether or not a recurrence took place. Microscopic examination showed the tumor to be a round-celled sarcoma.

Dr. D. A. K. Steele had observed a number of cases of sarcoma of the stomach, but they were secondary. All the patients died. The first was a young man, 18 years of age, who received a blow on the right testis, while playing ball. This was followed by inflammation and the development of a sarcoma. The testes and cord were removed thoroughly and carefully, but within a few weeks there was involvement of the mesenteric glands, and in four months the man had a large sarcoma of the stomach, which proved fatal in a few weeks.

Another patient was 20 years of age. He received an injury of the inner condyle of the femur, which was followed in a few weeks by the development of an osteosarcoma. The leg was amputated at the middle of the femur, and the patient made a good recovery, but in four or five months sarcoma developed in the flexor muscles of the forearm following unusually severe exercise. The muscles were removed and the man was well for three or four months, when he developed a sarcoma of the stomach, which caused his death about sixteen months from the time of appearance of the primary tumor of the femur.

Dr. E. W. Andrews was impressed with the remark of Dr. Ochsner relative to the possibility of there being a greater number of sarcomata of the stomach than is supposed. He concurred in this statement and said he thought this might be of clinical importance in changing the attitude of the profession toward gastroenterostomy in cases where radical removal is impossible. He did not agree with Mayo and Billings and others who condemn palliative operations on the stomach. When only one out of many cases is benefited it is worth while having operated. It is possible that only in these cases of carcinoma of the stomach life may be much prolonged, and a patient who lives for years after the operation for the removal of a malignant growth of the stomach in all probability had a sarcoma and not a carcinoma.

Dr. Yates, in closing the discussion, directed attention to the statistics of Fenwick, showing that in a series of 500 cases of tumor of the stomach sarcoma was present in 2 to 4 per cent. Of six or eight patients that have been operated on by thorough extirpation, 40 per cent. were alive at intervals of from two to twenty-four months after operation.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held April 3, 1906, with the president, Dr. Otto T. Freer, in the chair. Dr. A. H. Andrews read a paper entitled Transillumination of the Mastoid Cells as an Aid in Diagnosis.

DISCUSSION.

Dr. Norval H. Pierce:—I believe that transillumination in this region, as well as auscultation, which Dr. Andrews has advocated, has been used to a considerable extent in the past. The same factors that cause transillumination to be a method of diagnosis, that is subject to very great variations in its use in the frontal and maxillary sinuses, hold good when we use it in transillumination of the mastoid region. Dr. Andrews has quoted a case, where the anatomical peculiarities ren-

dered the method unsatisfactory. I can imagine, however, in those peculiar cases of acute exacerbations in chronic conditions, or in primary conditions, when there is extensive destruction within the mastoid, accompanied by little temperature, and little or no infiltration of the outside, that this might be of great assistance in leading us to the proper course of treatment. These are the very cases in which we need the greatest help, but it will not differentiate, for instance, a periostitis from disease of the interior of the bone, nor will it differentiate edema of the exterior of the mastoid, following a furunculosis of the external auditory canal. It will not be of any service to us, in my opinion, in any case where there is infiltration along the external auditory canal, either in chronic or in acute cases. I have had no special experience with this method, therefore I am speaking from off-hand judgment, but it may have a place in rendering valuable assistance in those cases where we most need assistance. At the same time, we must always bear in mind that the difference in the formation of the mastoid on either side in a given case may always cast a greater doubt on the results of transillumination than is cast in the case of transillumination of the antrum of Highmore, and even of the frontal sinus. Among these differences may be mentioned the size and shape of the sigmoid sinuses, the difference in arrangement of the pneumatic cells, etc. Transillumination of the frontal sinus is of greater value than transillumination of the maxillary antrum. I should say that mastoid transillumination stands third in importance or reliability, if we put transillumination of the maxillary sinus first, and transillumination of the frontal sinus second.

Dr. George E. Shambaugh:—I think we should all welcome this method, which Dr. Andrews has demonstrated, of assisting us in making a diagnosis of what is taking place inside the mastoid process in those cases where we have difficulty in determining what the condition may be. In ordinary cases, where distinct symptoms appear over the surface of the mastoid, we need not call upon this method, as we have much more definite and accurate means of determining the state of affairs inside the mastoid than this method can afford. This method, which the doctor has presented is, however, especially intended for those cases where the outer shell of the mastoid is dense and hard and prevents symptoms appearing early over the outer surface. It is just these cases where it is most urgent that we determine the condition in the mastoid cells, for the hard outer shell of the mastoid tends to force the pus to rupture internally, with much more serious results than when the rupture is over the outer surface of the mastoid.

I should expect this method to give the most positive results in those cases where the need for calling upon extra assistance in diagnosis is the least, that is, where the pneumatic spaces completely fill the process, allowing pus to get near the surface of the bone. On the other hand, this method would be least likely to give much assistance in just those cases where the need for assistance is the greatest, that is, where either the external part of the process is diploetic and not filled with pneumatic cells, or where, in cases of chronic suppurative otitis media, the larger part of the process has undergone the process of osteosclerosis, with obliteration of the pneumatic spaces. It seems probable that in such cases, where the mastoid is diploetic or sclerosed, the shadow cast would not be as marked as when the process was filled with pus.

An objection which, I should think, would interfere more or less with the efficacy of the test, would be the passage of light through the soft tissue between the speculum and the bony wall, in which case it might appear at the end of the speculum as though it had passed through the mastoid process. We meet with this difficulty in applying transillumination to the frontal sinus and, in order to obviate the difficulty, it is necessary to use a lamp that can be placed well back under the ridge of the orbit. In the case of the mastoid, we have no ridge to get under. Again, I should expect that where we attempted to obviate this difficulty by placing the lamp far back on the process, we would have cases where a deep shadow would form, because of an external position of the lateral sinus. This method, however, is one which I should not be surprised to find that we will all be using some day to assist in doubtful cases, just as in the accessory sinuses of the nose, transillumination is in universal use as an aid in diagnosis. I should

not expect this method to give us as reliable information as when applied to the maxillary sinus, and, perhaps, not as valuable as the transillumination of the frontal sinus. In using it for the mastoid, we have an advantage over especially the frontal sinus, in that the type of mastoid varies less on the two sides than does the frontal sinus.

Dr. Joseph C. Beck:—I have been very much interested in Dr. Andrews' paper with regard to transillumination of the mastoid. I have had experience with it in quite a number of cases, and am somewhat interested in it, but I have found it wanting in most cases. Where I found shadows and had made a positive diagnosis by that method, in opening the mastoid I found that it was quite free from any granulation tissue or necrosis, such as I had expected to find. If there is any method that is going to aid us in the diagnosis of these cases more than transillumination, it will be the use of the *x*-ray in diagnosing doubtful cases. I learned transillumination of the mastoid from the master or originator of the method, Dr. Urbautehitch, at his clinic, and, practically, it is not used there at all, nor is it used in most of the foreign clinics, contrary to what the author of the paper believes to be the proper method as to the diagnostic value of the method. I agree with Dr. Shambaugh, with reference to the adaptation of light to the mastoid process, that it does pass between the membranous canal and the bony wall, or the external wall of the mastoid process, and the light would show through the skin rather than through the bone.

I have had some experience with the use of the *x*-ray, and am working along that line. I believe it is a valuable aid to diagnosis. So far as the maxillary sinus is concerned, I believe the method of Dr. Andrews is excellent. I have recently been using transillumination of the frontal sinus on both sides at the same time, simply because the usual method of transilluminating the frontal sinus is very unsatisfactory, as Dr. Pierce has stated. I use a tube that illuminates both sinuses at the same time, but it does not help me very much in making a diagnosis. The other points made by the author with reference to the diagnosis of mastoid disease are certainly of great value.

Dr. Andrews (closing the discussion):—As far as the method of examination being new is concerned, I have made no claim to priority, although I must confess that I know of no one who has preceded me in the use of this method. There is a difference between originality and priority. A man can do original work, without being the first to have followed out that line of investigation. With regard to furuncles in the auditory canal, if the canal is so swollen that the speculum can not be introduced, we could not expect to get much or any result, but if the canal is sufficiently open, and if the furuncle has caused edema of the canal, it does not perceptibly change the condition of light transmission. I have not thought that this method of examination is infallible. I can not claim for a moment that when the light fails to pass through the mastoid and to be seen in the auditory canal, that this is, of itself, pathognomonic of mastoid disease, and I think that this may be said of shadows in the neighborhood of the antrum of Highmore, and also of shadows in the neighborhood of the frontal sinus. While they point toward the existence of disease, they are not pathognomonic.

With regard to the light passing around and through the skin, I have not observed that light shows very much of a tendency to go around corners, especially when there is nothing to reflect the light. If those who have used the light and have failed to get satisfactory results, will use it on the cadaver, and make control tests, they will so improve their technique that they will be able to get more or less satisfactory results from the use of it on the living mastoid.

CASE OF DOUBLE FRONTAL SINUS DISEASE.

LOUIS OSTROM, M.D.

ROCK ISLAND.

The photographs I pass around, show some of the things we do outside of Chicago. We do not have the opportunity of exchanging ideas that you have here. We sometimes, however, see some very interesting cases. This patient, Mr. F. C., aged 24, was incapacitated from work for six years, on account of so-called frontal

neuralgia. Six years ago he had la grippe. Since that time, he has had constant frontal headaches. For the first two years, there was more or less discharge of pus, but in the last four years there had been no pus, but, occasionally, thick lumps of mucus. The patient went the rounds of several physicians, until he visited Dr. Bernhardt, of my city, who kindly referred him to me. His nose was examined and found to be normal. The middle turbinates were not swollen, and the mucous membrane was healthy looking. Probing the frontal duct brought no pus. Tenderness over the frontal sinus was so marked that I felt warranted in making a diagnosis of double frontal sinusitis. Transillumination, in this and all other frontal sinus cases, has not been satisfactory in my hands, because this and all other acute or chronic sinus cases showed a distinct light reflex, while many cases, having no frontal sinus disease, have not transmitted light. I have used Freers' modification of Jackson's lamp. The man was in such a condition that he could not work, nor eat, so that he was willing to submit to almost anything. I removed the anterior ends of the middle turbinates about three weeks or so before I operated on the frontal sinus, which gave him partial relief. I started out with the intention of doing a double Killian, but his nose was too narrow, so I decided on Coakley's open method. My first incision extended from the outer end of the right eyebrow, in a curved direction, one-half centimeter above the supraorbital ridge, to the median naso-frontal suture. The periosteum was elevated, and the sinus entered with a gouge, removing considerable bone without puncturing the mucous membrane. When the mucous membrane was incised, about half a gram of clear watery fluid flowed out first, then masses of polypi, granulation tissue, and necrotic bone were met, completely filling the entire sinus. This was scooped out with a curette, and the septum, which was one and one-fourth inch to right of median line, and partially necrotic, was broken down, and a like condition was found in the left sinus. A similar incision was then made, from the outer end of the left eyebrow, extending to one-fourth inch from median end of right incision, leaving a bridge of skin and periosteum over the glabella. The anterior walls of both sinuses were removed, leaving both supraorbital ridges; the mucous membrane of the sinuses was carefully removed with sharp curettes, the naso-frontal duct and anterior ethmoidal cells destroyed with the curette, carefully avoiding the cribriform region. On completion, the actual size of the sinus, measured from the ledge of bone over glabella was, height, $1\frac{1}{2}$ inch, depth 1 inch, while this was much enlarged below by the large ethmoidal cells, extending up to the orbital margin. The left incision was completely closed by sutures, and the right closed except for the median inch, through which both sinuses have been packed. The patient has made an uneventful recovery, with no depression or deformity. A slight pitting at point of dressing can be remedied with parafin.

In regard to dressing this and other similar cases, I will say that, for the first two or three weeks, the dressing has been attended with so much pain that it was necessary to give the patients a fourth of a grain of morphia every time, as they nearly fainted or collapsed from shock every time I attempted to dress them. The interesting features of this case are: 1. Obscure symptoms, frontal pain and tenderness being the only guide. 2. Nasal cavities normal in appearance. 3. No discharge of pus from the nose for the last four years. 4. The large size of the sinuses. 5. A bridge of skin and periosteum left over glabella, preventing depression. 6. Transillumination was negative. 7. Both sinuses were dressed through one external opening.

Dr. George E. Shambaugh presented a

CASE OF MAXILLARY OR DENTAL CYST.

"HYDROPS ANTRI HIGHMORI."

The case I have to present is that of a woman, 25 years of age. For the past year, she has noticed that a swelling had been gradually developing over the anterior or facial wall of the antrum on the right side. She has experienced no pain, except the soreness produced by examination. The swelling is now about the

size of a hickory nut, its surface is rounded and smooth, the mucous membrane over it is unaltered. The swelling extends from the canine tooth well back to the second molar. The patient claims that, on some days, it appears more swollen than on others. On examining the swelling with the finger, it is found to have a bony wall, but, on pressure, it can be readily indented, producing the sensation of crackling, not unlike that produced when indenting a piece of parchment. There have been no nasal symptoms, and nothing abnormal was found on examining the nose. Her teeth are very bad, and several on the affected side have been crowned. On transillumination, both antra appear equally clear, and it is evident that the antrum is not the seat of an empyema. On account of the nervous condition of the patient, no puncture has been made, either of the nasal or anterior wall of the antrum.

Cases presenting the clinical symptoms, which are found in this patient, were formerly described in the literature under the hypothetical term of "hydrops antri." As the characteristic symptoms of this condition are given an ectasia of the facial wall of the antrum, which, on pressure, produced the parchment-like crackling. The condition was supposed to arise from the blocking up of the normal opening of the antrum into the nose by an inflammatory swelling, such as a polyp. As a matter of fact, no such condition as the above has ever been found. When it became evident that the explanation given above, of the etiology of the symptoms presented by these cases, had to be given up, the following explanation was brought forward. It was known that in disease of the lining membrane of the antrum, the formation of cysts was not uncommon, and it was claimed that the enlarging of such a cyst, until it completely filled the antrum, finally resulted in producing an ectasia of the anterior or facial wall of this sinus. This explanation seemed all the more plausible, because of the occasional symptom, in these cases, of a discharge of a seromucous exudate into the nose, which was explained by the rupture of such a cyst, and its emptying into the antrum, and the final escape of the fluid through the ostium maxillary into the nose. When these cases were operated on, a large cavity, presumably the antrum, was found filled with a mucus, sero-mucus, or even a purulent discharge, which represented the contents of the supposed cyst. Now, while cystic degeneration of the mucous lining of the antrum is by no means an uncommon occurrence, this condition has never been known to produce the symptoms given as characteristic for cases of "hydrops antri," namely, an ectasia of the facial wall of the antrum.

That an ectasia of this wall of the antrum could not be produced, as was formerly supposed, by accumulation of secretion in the cavity of the antrum, whether in the nature of pus or mucus, or from an enlarged cyst, is very evident, when an examination of the several walls of the antrum is made. Of the walls of the antrum of Highmore, the facial is the strongest, and, therefore, the one least likely to show ectasia from accumulations in the antrum. The nasal wall, on the other hand, is the thinnest wall, and, for a considerable area in the middle meatus, the bony wall is wanting, and the antrum is separated from the nasal chamber only by the mucous membranes of the antrum and of the nose. These spaces have been named by Zuckerhandl, the nasal fontanelles. It is here that we frequently find bulging, when the antrum is filled with pus. Yet in these cases of "hydrops antri," bulging has never been known to take place in the nasal wall, while the firmest wall of the antrum, namely, the facial, is the one that shows the ectasia. It was through the knowledge of these anatomical facts and the absolute failure to find any evidence of the existence, either of the condition described as "hydrops antri," or of ectasia of the facial wall, resulting from an enlarged mucous cyst in the cavity of the antrum, that the correct explanation of the cause of the symptoms presented by these cases was finally reached.

Cases presenting an ectasia of the facial wall of the antrum, which, upon pressure, elicits the characteristic crackling due to indentation, are cases of enlarged dental cysts. Small cysts of this kind are by no means uncommon. They occur at the apex of the dental root, and are lined with epithelium, derived from that covering the root of the tooth. These dental cysts are probably always the result of irritation, either from a retained tooth, or from an inflamed root. A

cystic cavity is formed, for which room is made by an absorption of the surrounding structures. These dental cysts sometimes produce a bulging in the roof of the mouth, sometimes they extend upward into the cavity of the antrum, which they may, in a large measure, fill; at other times, the dental cyst may produce an ectasia of the facial wall of the antrum, as in the case reported here. It was in the cases presenting this latter condition, an ectasia of the facial wall of the antrum, which, upon pressure, elicited the characteristic crackling, that the term "hydrops antri" was formerly used. The correct term for such cases is maxillary or dental cyst.

DISCUSSION.

Dr. William E. Casselberry:—A few years ago two cases passed under my observation, which, together with a review of the literature, I published under the name of *Serous Disease of the Maxillary Antrum*. The first case was acute, and, on making an exploratory puncture through the nasal wall, I drew out two syringefuls of a clear, straw-colored serous fluid. I repeated this operation with the same result on the following day, and again on the third day, when pus appeared in place of the serous fluid. The other case was chronic, one of nasal polypi, in which transillumination did not show a distinct shadow, which test being indecisive, repeated puncture tests were made, first for diagnosis and later, at weekly intervals, to afford samples of the clear serum obtained for the purpose of chemical and bacteriologic examination. The serum was taken out through the antro-nasal wall with a Schmidt syringe, the punctures being made in various locations, in order to embrace the entire cavity or antrum in the tests, as far anteriorly and posteriorly as possible, and up and down, but always the same kind of fluid, namely, a perfectly clear, opalescent, slightly-yellowish material was withdrawn. The disease was bilateral, hence, if cystic, the cysts, one on each side, must have totally filled the antrum. In looking up the subject, I found there were three conditions which had been confused, one for another. The first is the dentigerous cyst, which originates in the anterior wall of the antrum and which has been so well described by the essayist, the distinction which he draws as regards the bulging of the anterior antral wall being a useful one. In neither of the two cases which I reported under the name of *Serous Diseases of the Antrum*, was there any bulging or malformation of the anterior wall of the antrum. The second condition is that of a cyst within the antrum, due to degeneration of a polypus or closure of a glandular duct (not a dental cyst) and, in the two cases which I reported as serous disease, and in others described in the literature, it is difficult to decide whether the fluid may not have been cystic, rather than a serous exudate free in the antrum, with possibly a closed antrum orifice. I believe it to have been a free mucoserous exudate in my cases. Killian and Hajek, while regarding cystic formations as more numerous, accept as possible the free accumulation within the antrum of mucoserous and serous fluid. Other modern authors cite cases in which there was no cyst-wall and no "rest" or single angle unfilled, and to these cases the name of "serous disease" or *hydrops antri inflammatorius* is given.

Doubtless, most of the cases of "hydrops antri," from the older literature, were dentigerous cysts, but the term is not now thus limited, being used to embrace also non-dentigerous cysts within the antrum and free "serous disease" of the antrum, the latter being "*hydrops antri inflammatorius*."

Dr. Joseph C. Beck:—I would like to ask Dr. Shambaugh whether he punctured the cyst or not?

Dr. Shambaugh:—I did not.

Dr. Beck:—I had a case of dentigerous cyst two years ago. The patient presented very much the same symptoms as those reported by Dr. Shambaugh. The patient declared that he had a capped tooth, which was exceedingly sensitive. He was a man, 35 years of age. I had the capped tooth extracted, and found, beyond it, a large cyst filled with straw-colored fluid. I dissected the cyst wall thoroughly and packed it, believing it would heal by granulation, as we know that these cavities do not collapse very easily. I did not succeed in filling it out, and I secondarily removed a portion of the cyst wall, which was not very hard in

consistency. It was not compressible, so that I could press it in to eliminate the cavity. This patient developed a sarcoma on top of this condition, and succumbed to that disease.

Cases of large dentigerous cysts are on record. For instance, Killian found one leading clear up to the nasal cavity, which became malignant. A point that interested me particularly in Dr. Casselberry's discussion was with reference to finding fluid in the antrum postmortem. We are all doubtless familiar with the results of Wingrave's investigations of the postmortem examinations of sinuses, finding them filled with fluid, in most instances. Disease of the antrum does not always exist when there is fluid found after death.

Dr. Norval H. Pierce:—There are two attractive points that have been brought out by the essayist and by the discussion. First, we can not depend on the sensation of crepitus in these cases, in differentiating dentigerous cysts from sarcoma. We may get the same sensation precisely from a dentigerous cyst that we get in a sarcoma. I believe it is the consensus of opinion of late investigators and writers that no inflammatory condition of the antrum of Highmore causes a bulging. Whenever we get this condition, we have to do with a cyst, a dentigerous cyst being in all probability the most frequent. This is due to a physical fact, namely, that in order to push downward or outward the wall of the antrum of Highmore, the cyst or the condition causing the bulging, the displacement, must have a point of purchase, which dentigerous cysts have, as they form primarily in the bone. In inflammatory conditions we have bulging of the fontanelle of the middle meatus, as it has been termed, and I have frequently seen bulging in empyema, but, aside from this valuable differential point, we do not get displacement of any other wall in inflammatory conditions, but we do get it in the cystic condition, and in all cases in which there is tumor formation in the wall.

Dr. Shambaugh (closing the discussion):—Where we have a case presenting the symptoms which this one shows, of a bulging of the facial wall of the antrum, the question whether the trouble is due to antrum disease is out of consideration. This question has long been cleared up and we know, at once, that we have to do with a dentigerous cyst. The term *hydrops antri*, as formerly used in the literature, applied to cases of supposed antrum disease where a bulging of the anterior wall was present and a characteristic of this disease was the crepitus produced by pressure. The term originated under a mistaken conception of the real condition. I see no reason why the term *hydrops antri* should not be still used, not applying to cases where this ectasia exists, but where the antrum is the seat of disease, such as an accumulation of secretion, as was found in one of the cases, at least, of the two described by Dr. Casselberry several years ago. I am not aware, however, that this use of the term *hydrops antri* has been made.

Dental cysts do not always produce a bulging of the facial wall of the antrum. They sometimes produce a bulging into the roof of the mouth and sometimes the dental cyst will be produced entirely at the expense of an antrum, sometimes even causing an almost complete obliteration of this sinus. In such a case, where the cyst has grown into the antrum without producing an ectasia of the facial wall or the roof of the mouth, it will be found quite difficult to make a positive diagnosis of the condition. Should one suspect, from certain indefinite symptoms, that the antrum was the seat of disease and a puncture of the antrum wall is made with extraction of fluid, it would be found quite difficult to determine which of the conditions were present, a dental cyst, a cystic degeneration of the mucous lining of the antrum or fluid filling the cavity of the antrum. It may be that a study of the fluid, which one withdraws in making the puncture, may assist in determining its origin.

Dr. William E. Casselberry:—The fluid from my cases of serous disease, which I caused to be carefully examined by competent microscopists at the time, was practically sterile. It had a little fibrin, serum albumin, a few epithelial and lymph cells, but did not contain cholesterin. It has been stated that in the contents of cysts cholesterin is found, this being regarded as one distinction.

Dr. Charles M. Robertson read a paper on

MEMBRANOUS RHINITIS (NON-DIPHThERITIC).

CHARLES M. ROBERTSON, M.D.

CHICAGO.

Fibrinous rhinitis is a disease which, although not so rare in its appearance as to warrant special attention, is not so common in the strict sense of being one of the diseases frequently met in practice, save that form which follows some mechanical injury to the nasal mucosa. After operative procedure, especially with the galvano-cautery, it is not an uncommon occurrence. The presence of some irritation from inhalation of gases or from a foreign body may often cause it.

It is not my pleasure to discuss this phase of the subject to-night, nor yet that form which is found to be diphtheritic. Eliminating these several forms of membranous rhinitis, then, the disease might be termed a rare condition. I can find but few records in which diphtheria bacilli are not found, and for this reason I take the liberty of presenting the histories of two cases, which represent a disease rather than a condition resulting from some traumatism, or due to some cause other than invasion by the Klebs-Loeffler bacillus.

Case 1.—On February 16, 1902, I was called to see H. B., in consultation with his family physician, on account of a discharging ear. The patient, a boy, five and a half years old, had always been a delicate child. His mother was delicate and neurotic and had been so all her life. The father was strong and well nourished, but nervous. The child had had most of children's diseases, and was decidedly undersized and anemic. About ten days previous to my visit, he had been taken with a chill, following which, what was supposed to be an ordinary coryza developed. The temperature had ranged from 99° to 102° F. The nostrils were both occluded most of the time, and the child frequently blew sero-mucus from the right side. The parents had difficulty in having him blow his nose, as he exhibited a tendency to swallow the discharge rather than use the handkerchief. The edges of the nostrils were red and moist, but not much excoriated. General medication and an alboline spray were being used when I first saw the patient. The urine seemed normal in amount, but was not examined. Bowels were normal, as was the skin. Upon examination, I found the right nostril occluded, and after contracting the turbinals with cocain and adrenalin, I found a membranous exudate high up and far back on the septum, grayish-white in color. Upon removal of the false membrane, the nose bled for quite a time. The affected spot being so far back, it was impossible to see it on account of the bleeding and the impatience of the child. The lower turbinate, before applying cocain, was so swollen as to press against the septum. There was a sero-mucus discharge which was tinged with blood. The left nostril was markedly less swollen than the right, and I could find no exudate or bleeding spot in it. The submaxillary glands were swollen and somewhat tender. The faucial tonsils were free from membrane, but red. There was a bloody discharge staining the post-pharyngeal wall, running down in streaks. The pharynx was red and inflamed. The right ear was discharging a quantity of mucopus, which had appeared a few days prior to my visit, after a few hours of severe headache. The membrana tympani was very red and presented a perforation below and in front of the handle of the malleus. Cultures from the nose and naso-pharynx showed the presence of staphylococcus and streptococcus, while from the ear discharge there was only staphylococcus. No diphtheria bacilli were found. Three days later the left ear began to pain him, and, on inspection, was found red, with a slightly bulging membrane. This was freely incised, and a few drops of bloody serum escaped, which showed only staphylococcus. I noticed at this time a red spot on the right cheek, the size of a silver dime, about one-half of an inch in front of the ear. The pinna of the right ear was swollen and red. The temperature had risen about one degree a day since I first saw the case, and was of interrupted type, such as is found in erysipelas. On this day it was 104° at 4 p. m. After cutting the membrane of the left ear, the temperature fell to 102° in a few hours. The child was very restless, and the pulse ranged from 116 to 130, but

was of fair volume. The following day the spot on the cheek had the typical appearance of erysipelas, and spread rapidly over the right side of the head and face to the median line and down to the upper eyelid on the left side.

Cultures from the blebs on the face showed the presence of streptococcus. The child at this time showed intestinal involvement, and soon had bloody stools. In a short time, the urine became cloudy, with some albumin. The full urinary findings I can not report, as they were not furnished by the attending physician. The nose bled violently on the second day of my visit, which was caused by the nurse attempting to clean the nostril. It was necessary to pack both nostrils and the postnasal space for twenty-four hours. Subsequent hemorrhages occurred from the right nostril, which were controlled with adrenalin. The right ear ceased discharging on the fifth or sixth day of my visits by obstruction of the perforation. Drainage was established again, by cutting the membrane in the postinferior quadrant. The ears ceased discharging on the twenty-sixth day for the right, and on the eleventh for the left. The rhinitis resolved at the end of three weeks from the time I first saw the case. The erysipelas ran a rapid course, and the temperature and pulse were typical of this form of sepsis. The child made a good recovery in about another month, save for a catarrhal discharge which persisted until a trip into the country made him stronger, at which time the discharge from the nose disappeared.

Case 2.—Referred to me at my clinic as a case of fibrinous rhinitis by his family physician, Dr. J. M. Washburn, who has furnished me with the following history:

Willie C., aged 8, white. Had whooping cough when a baby. Scarlet fever four years ago; measles two years ago; tonsillitis one year ago. Usually sleeps well, appetite good, bowels regular. Third grade in school. Not exposed to diphtheria as far as known. Friday, December 16, 1905, nose felt sore and stuffed up. Slight headache; felt feverish and depressed; no chill; nose bled a little when blowing it. Sunday night vomited once. Child up and around, outdoors. Brought to office Monday, the 19th, by mother, on account of membrane in the nose. Well developed boy; looks ill; temperature 100° F.; pulse soft, 116 (130 when excited), not irregular, not intermittent. Heart, lungs, abdomen, skin, negative. Left nostril occluded, with fibrinous gray-white membrane, bleeding when removed. Small patch of membrane of same character on the left tonsil. Pharynx generally congested. Submaxillary glands enlarged. Cover-glasses prepared from membrane, stained with Loeffler's alkaline methylene blue, showed many cocci and other bacteria, but no Klebs-Loeffler bacilli. Cultures were made on the blood serum furnished by the Health Department from the membrane of both nose and throat, and sent to the Health Department Laboratory. Urine clear; acid, 1015; no albumin; no sugar; no casts, or other abnormal elements.

Treatment.—Cleaned out anterior nares as far as possible; swabbed with 10 per cent. argyrol; ordered douche of glycothymoline every three hours. Internally, calomel, aspirin and simple tonic. Light diet. Isolation ordered until report from Health Department was received. On the 19th a report was procured from Health Department, which stated: "No diphtheria; staphylococci; influenza." Nostril was cleaner anteriorly; patch on tonsil not enlarged; patient feels better; still bleeds when he blows his nose. Sprayed with 1-5,000 adrenalin solution, and referred to Dr. Robertson. Upon examination, both nostrils were found occluded, and presented a large amount of grayish-white membrane bathed in a sero-mucous discharge, which was profuse. The inferior turbinate was, as far as could be ascertained, swollen and flabby. The false membrane was adherent and the mucous membrane bled on the slightest manipulation with a cotton pledget. Pieces of the membrane were removed for culture purposes and showed the presence of staphylococci and influenza bacilli. After removing pieces of the false membrane, the nose bled profusely, but stopped after a little of its own accord. The surface of the mucous membrane was rough and red, and the turbinate greatly swollen. After the exudate was removed, new exudate quickly formed, and had a striking appearance of the exudate found in diphtheria. Owing to the fact

that the case was seen in the clinic, it was observed only on alternate days. On the fourth visit, the right lower turbinate was not so much swollen, and the exudate was removed in one piece. The piece removed was the exact size of the surface of the turbinate for its entire extent, and about 3 mm. in thickness. On the next visit, the membrane in the left nostril was removed. At this time the right nostril was discharging little, but the mucous membrane was still very red and swollen. The left nostril followed the course of the right, and recovery was rapid. The exudate on the tonsil disappeared about the same time as that in the left nostril. The glands then began to diminish in size and the health of the child was soon restored. The disease in this case lasted about two weeks. In both of these cases diphtheria bacilli were absent.

Most authors who have observed this disease are inclined to class it as a nasal diphtheria, but these two cases, although resembling it both objectively and subjectively, were non-diphtheritic. I report them on this account, to show that we do have non-diphtheritic membranous rhinitis. The disease is a self-limiting one, running its course in from two to six weeks. The membrane, if left alone, will usually peel about the ninth to fourteenth day. It resembles diphtheria very closely, but can be differentiated easily by culture tests. This, too, will tell whether quarantine is required. In case 2, there was a tendency to develop atrophy of the turbinates, which will be observed as to ultimate result. The three germs in these cases were the streptococcus, staphylococcus and the influenza bacillus. In case 1, the ears did not show the full infection that was present in the nose, and I could not account for the absence of streptococcus in the ear discharge. The ears were a simple infection from the naso-pharynx, and ran the ordinary simple infection course.

DISCUSSION.

Dr. Louis Ostrom, Rock Island:—I saw a case similar to those that have been reported, three weeks ago. The patient was a man, 50 or 60 years of age, the proprietor of a piano and organ factory. He presented himself three weeks ago with a distinct membrane extending over the uvula towards the margin of the soft palate, the pharynx, postnasal space, and about halfway forward on the turbinates. Smears from it showed pure streptococcus; no diphtheria. The health report showed no diphtheria. The condition lasted about a week. He had a very high temperature, suffered much pain, and had acute tubal catarrhal otitis media, with severe earache, which did not pass into suppuration.

Dr. William E. Casselberry:—We know that pseudo-membranous exudates in the pharynx are usually diphtheritic, but they are not invariably diphtheritic, and there is no reason why the same dictum should not pertain to the nose. No doubt the usual type of membranous rhinitis is diphtheritic, in a sense, but cultural tests and the clinical course are apt to differ from ordinary diphtheria. It does not produce the same degree of systemic depression, and it is not as virulent as regards extension to other parts as is a case of regular diphtheria. Nevertheless, these variations are differences of degree rather than of kind. The fact remains that the majority of cases of membranous rhinitis are certainly diphtheritic in the sense that they are mild forms of diphtheria, and capable of transmitting diphtheria. But as stated by the essayist, we do have exceptional cases which are not diphtheritic. I recall having published three cases of membranous rhinitis, one of which was non-diphtheritic. It was in the person of a physician infected after attending a scarlet fever case. He had also a pseudo-membranous pharyngitis, but the membrane was of a thin inflammatory character rather than typical of diphtheria. The membrane in the nose looked as much like a diphtheritic membranous rhinitis as it possibly could, but culture tests excluded the Klebs-Loeffler bacillus. The case presented symptoms of erysipelas later on, which led to my statement at the time, that the micro-organism of erysipelas was likely causative of the membranous rhinitis.

The other two cases were much like this one, minus the pharyngeal implication and the erysipelatous hue, yet they were diphtheritic as proven by culture. One was a trained nurse, who was infected during attendance on a diphtheria case, the

other a physician, who was practicing intubation often for laryngeal diphtheria, yet in both the nasal disease ran its usual mild course.

Dr. Robertson (closing the discussion):—There was one point that I did not bring out in my paper that I would like to speak of now. In cases in which the exudate develops the staphylococcus, it is altogether probable that we would not get the germ that produces the exudate, but rather the germ that is present after the exudate is formed. The staphylococcus, although nearly always present in these exudative forms of the disease, both in the throat, ear and nose, is secondary. The primary bacillus or coccus has done its work, whether it be the pneumococcus, influenza bacillus, streptococcus, or colon bacillus, and then has been reabsorbed. The bacillus does its work and is reabsorbed by the system, producing the systemic poisoning that we get. Then the staphylococcus comes on as a secondary infection. Dr. Fenton B. Turck is making some experiments now on the mucous membranes of dogs, that is, the mucous membrane of the colon and intestine, and he finds the staphylococcus predominates after the membrane is formed. The germ which causes the primary infection disappears, producing the systemic poisoning.

Dr. Charles J. Whalen read a paper entitled

A CASE OF SO-CALLED LARYNGEAL VERTIGO (BRONCHIAL SYNCOPES).

CHARLES J. WHALEN, M.D.

CHICAGO.

Mr. D., a salesman, aged 60, always enjoyed good health, except that he had had a bronchitis for the past five winters. In April, 1905, he contracted a cold, followed by slight hoarseness and a cough. Shortly afterward, the children of the household also began to cough in paroxysms of increasing severity like the grandfather. In the case of the children, the diagnosis was cleared when a few weeks later the whooping stage of pertussis came on. With the grandfather, the cough continued to grow more severe, coming on in paroxysms, but without the characteristic whoop, as in the case of the children. Examination of the throat showed 10 per cent. congestion and swelling of the vocal cords, a mild pharyngitis, but no physical signs over the chest, except a few dry and fine moist râles. The kidneys, heart and other organs were normal. The laryngitis and pharyngitis yielded readily to treatment by mild astringent sprays, so that in the course of two weeks all evidence of local inflammation had disappeared. Four weeks after the onset of the trouble, during a paroxysm of coughing, the patient lost consciousness for a couple of minutes. From that time on, he had several attacks daily, in which there was complete loss of consciousness. During sleep also, the patient would start up suddenly at the beginning of a paroxysm of coughing and fall over unconscious. This state of affairs continued during May, June and July. In the months of August, September and October, the same condition existed, but occurred less frequently. With the approach of winter, the cough became worse, owing to his taking a fresh cold, and, with the aggravation of the bronchial trouble, the paroxysms became as severe as before, and, with the return of the paroxysmal cough, the spells of unconsciousness became more frequent. The attacks would average several a day, and altogether the patient has had fully 150. He has been more or less continuously under treatment since the onset of the disease. He has taken all the usual internal remedies and inhalations given for cough with no material benefit until about six weeks ago, when cod liver oil was begun. Shortly afterwards the paroxysms began to lessen in severity and at the present time he is continuing to improve.

Ever since 1876, when Charcot¹ first called a certain symptom complex laryngeal vertigo, and described three cases, the literature of this affection has been accumulating, with occasional protests against the propriety of the name. As the first description, his contribution will remain a classic, no matter what the final consensus of opinion may be as to the accuracy of his observations. It may be as well to introduce the subject with Charcot's description. "The patient feels

1. Gaz. Med., 1876.

a tickling in the lower part of the larynx, a sort of heat or burning, then a little dry cough occurs, followed by a kind of attack, during which the patient collapses, loses consciousness. He is purple, turgid, and presents convulsive attacks of one or two limbs, on one or both sides. The attack is short, and the patient can resume his conversation. In some cases, he has lost remembrance of what occurred during his fall. At times, the tickling is very slight and causes simply a dizzy state without proceeding to a fall. At other times, it is only a breathlessness. These attacks may be repeated fifteen or twenty times a day." Charcot concedes that an irritation of the laryngeal nerves causes the vertigo, just as irritation of the auditory nerves causes Meniere's disease. "Finally, this crisis has the appearance of an epileptiform attack, preceded by a spasm of the glottis of variable intensity."

In 1884, P. McBride² reviewed the literature, which at that time included articles by Gasquet, Krishaber, Gray, and Leferts, and describes a case in which the patient felt as if his throat were squeezed together. He had no burning or tickling, but said all the breathing machinery seemed to stop. McBride experimented with forced expiratory efforts with the glottis closed and noted the nearly obliterated pulse tracings with the sphygmograph, and the tendency to syncope at the same time. From this, he argued that the increased pressure in the lungs tends to prevent the passage of the blood through the lungs, lessening the blood in the left side of the heart. Pressure on the large veins must also hinder the return of the blood. Thus, the face will be turgid or pale, according as spasm of the glottis lasts a longer or shorter time. Direct pressure on the heart also may help to paralyze its action. He quoted Weber,³ who, unknown to him, had performed a similar experiment in his own person, producing actual syncope with convulsive twitching of the face.

Lennox Browne⁴ was the first to describe laryngeal vertigo in a systematic treatise. He used as synonymous terms also laryngeal epilepsy and complete glottis-spasm in adults. Browne agreed that McBride's theory as to the cause of this condition would be generally accepted. He made the further observation that vascular disturbance affects the cerebral circulation, resulting sometimes in epileptiform manifestations, sometimes in simple syncope. As his own three cases presented marked varix of the base of the tongue and upper part of the larynx, he thought that some form of varix would usually be found if proper examination is made.

In 1887, Fred. I. Knight⁵ added two cases from his practice and reviewed the history of fourteen cases from the literature. He used the term laryngeal vertigo, though believing it entirely erroneous, because the other names proposed unwarrantably assume the nature of the disease. He thought there was no proper evidence of vertigo, but that it was simply giddiness. He believed that sufficient disturbance of the cerebral circulation can be produced by the forced expiration of cough, or by rapid respiration, to cause dizziness or even momentary loss of consciousness without spasm of the larynx. He suggested that the attacks were due to idiosyncrasy or unusual liability to loss of consciousness. W. C. Phillips⁶ patient "felt as if in Heaven" during the few seconds of unconsciousness. Phillips attributes the pleasurable sensation to asphyxia and offers the term laryngeal syncope as the best description. D. B. Delavan⁷ favored the name laryngeal crisis as best fitting his two cases. Adler's⁸ patient had no giddiness nor premonition of any kind before falling, nor any tickling or burning in the larynx before the cough. The patient said he choked and wished to cough, but could not get it out. Examination showed an elongated uvula, which probably caused spasm of the glottis as he held his head very low when coughing.

J. E. Newcomb's⁸ patient had a spasmodic cough accompanied by clonic spasm of all the muscles, so severe on one occasion as to throw him out of bed. While

2. Edinburgh Med. Jour., March, 1884.

3. Muller's Arch., 1851.

4. L. Browne: Dis. of Throat, 2d ed., 1887.

5. Trans. Am. Laryn. Assoc., 1887.

6. Med. Record, March 12, 1892.

7. N. Y. Med. Jour., Jan. 30, 1892.

8. N. Y. Med. Jour., Sept. 10, 1892.

accepting McBride's theory as more applicable than epilepsy, Newcomb said: "The missing link in our logical chain is the inability to explain why the severity of the paroxysms does not vary directly with the gravity of the local condition. Nor do we know why some patients are thus affected, while the vast majority escape."

A. C. Getchell⁹ adds two cases and reviewed literature of seventy-seven cases. He considers none of the previous theories satisfactory. Vertigo is mentioned as a symptom in only seven out of seventy-seven cases, and it does not persist as in Meniere's disease. Vertigo does not proceed from laryngeal affections and manipulations. The age of patients is against the theory of epilepsy. And there are no convulsions. The fall occurs too early in the attack of cough generally to allow severe disturbance of circulation to be the cause.

Getchell concludes that the patients have unstable equilibrium of the central nervous system, with some abnormal condition of the air passages, liable to cause laryngeal irritation with cough and glottic spasm. The closing of the glottis acts upon the inhibitory center and causes syncope. Severe paroxysms of cough may also cause syncope, but will not unless there is disorder of the central nervous system.

J. Middlemass Hunt¹⁰ added two cases, and considered the name laryngeal vertigo unfortunate, as it is not vertigo, but loss of consciousness which is the most striking feature of these cases, whereas loss of consciousness is extremely rare in ordinary vertigo. Hunt classifies the cases as follows: 1. Cases following violent paroxysmal cough with more or less complete glottic spasm and great cerebral congestion such as is sometimes observed in pertussis. 2. Cases of true epilepsy. 3. Cases of laryngeal vertigo proper, better named "ictus laryngis," in which laryngeal irritation with little or no congestion and no glottic spasm, is followed at once by giddiness and loss of consciousness, complete recovery following in a few seconds.

The age of 77 patients subject to laryngeal vertigo, as reported by Getchell, ran from 17 to 72 years, over two-thirds being between 30 and 60. As to sex, all were males except four. As to social condition, nearly all were well-to-do, and the majority led sedentary lives, though one was a sailor. A neurotic temperament has been noted in several, and addiction to alcoholic stimulation, rheumatism and gout has each been observed in a few. In the absence of any generally accepted pathological basis for laryngeal vertigo, we will summarize the varied complications or associated conditions observed. Thus, it occurs most often during the course of chronic bronchitis, pharyngitis, subacute laryngitis, catarrhal pneumonia, asthma and other conditions giving rise to a cough. Exciting causes observed include violent emotion, such as grief and fear, a day of worry and fatigue, taking a pinch of snuff, inhaling tobacco smoke, swallowing a bone. Objective signs have not been fully recorded, but include the usual physical signs of the accompanying conditions. Hyperemia of the pharynx and larynx and elongated uvula have been noted in a number of cases, varix at the base of the tongue in three, and a polypus in the larynx in one.

Symptoms.—The Charcot description of the symptoms remains substantially in accordance with the accumulated experience of the profession. A few cases have been noted where no tickling, burning or other sensation in the larynx preceded the attack. In many the cough has been harsh and paroxysmal, with the expulsion of tenacious mucus, instead of a "little dry cough." The face may not be congested, but even pale as noted by McBride. Charcot seems to have been unduly impressed by the resemblance of an attack to epilepsy, owing to the rigid and spasmodic state of the arm of his second patient. Convulsive movements of the muscles have been noted in only about 10 per cent. of the cases, and biting the tongue only once (Adler⁷). Stridor, like that of pertussis, was noted in two cases (Browne⁸). As to frequency of attacks, Browne records one case that had attacks at intervals of several years. Vertigo was noted in only 10 per cent. of the cases, while loss of consciousness of variable length, but usually

9. Boston Med. and Surg. Jour., Nov. 11, 1896.

10. Liverpool Med.-Chir. Jour., 1898, vol. xviii, p. 310.

momentary, remains the essential symptom. Inasmuch as bronchitis is by far the most common associated condition, and some cases present no abnormal condition of the larynx upon careful examination, I would suggest the term bronchial syncope to designate this symptom complex.

Prognosis.—The prognosis is favorable, only one death has been reported (Schadewaldt¹⁰), though there is a possibility that some deaths due to this condition have been recorded under "heart failure" or other names.

Treatment.—Little need be said as to treatment. Naturally, the question of treatment resolves itself into a consideration of the associated local and general conditions. A careful physical examination of the nose, throat and chest is essential. The relief of inflammatory conditions in the respiratory tract has frequently been followed by prompt cessation of the attacks of syncope.

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DISCUSSION.

Dr. William E. Casselberry:—One case I recall at this time, which, however, would better be known as laryngeal crisis, inasmuch as that was the name I gave it at the time. It did not correspond to the typical Charcot description of laryngeal vertigo, since the man did not actually lose consciousness, and did not suffer actual convulsive movements. He would be taken especially at meal time, sometimes when he had not yet commenced to eat, with a slight cough, a strangling sensation, a sense of tickling in the larynx, and then constriction, as if his wind was cut off. He would either fall off the chair or would have to be helped from the table, but I could not get from him the fact that he ever had total loss of consciousness. He had an enlarged lingual tonsil, which I removed, but without benefit as far as the laryngeal crisis was concerned. The condition extended over several years, the crisis gradually becoming less prominent, but in the course of five years locomotor ataxia became plainly manifest, so that I have since regarded the laryngeal crisis as a prodromal symptom of the locomotor ataxia, of a nature similar to gastric crisis and other curious prodromal symptoms of tabes. I do not mean to suggest that the essayist's case of laryngeal vertigo is of a tabetic nature, but only that some centric neurosis is fundamental to it.

THE THERAPEUTIC USES OF FOOD.*

J. H. SALISBURY, M.D.

CHICAGO.

The nutritive value and use of food has received thorough investigation, so that it would be trite and unprofitable to attempt any discussion of it at this time. But the use of food as medicine, for the purpose of accomplishing definite therapeutic indications has received less attention, and, I think, is of sufficient importance to justify a short review, because, even if some of the facts are well known, they are not sufficiently emphasized.

An intelligent use of food for therapeutic purposes requires that we give attention not merely to the effects of food in building up wasted tissue or in furnishing energy to the body, and that we determine the quantity of food necessary to maintain good nutrition, but that we investigate the action of food on the functions of the various organs and determine the effect of the qualitative and proportionate composition of the diet.

Many studies of the action of various foods on the digestive organs have been made. We call attention to the results of the chief of these, in reference to the sensory, secretory and motor functions of the stomach. The effects of food on sensation are indeterminate and are, for the most part, to be classed as idiosyncracies. A healthy man has no sensation on taking food, although local sensations of pain are sometimes felt after too cold drinks and indirect sensory effects, such as headaches, asthma, etc., are often observed from various articles of diet, such as strawberries, shellfish, etc. These results, while interesting, are at present so indefinite as to give no ground for therapeutic deductions, further than the warning to give heed to individual experience in dealing with individual

*Read before the West Side Branch of the Chicago Medical Society.

cases. Strauss, however, uses sugar as a remedy for the purpose of relieving the pain due to hyperacidity.

The action of food on secretion is better known. The experiments of Pawlow and his students, by a method which permits of securing the pure gastric juice, have determined that pure albumin and carbohydrates have no effect on the secretion of gastric juice. On the other hand, water exerts a certain stimulating action and the secretion of the gastric juice is powerfully stimulated by the extractives of meat. This fact allows of important therapeutic application, not only negatively, but positively.

The action of meats, in increasing the secretion of acid in hyperchlorhydria, is thus explained, and the method of overcoming the difficulty is indicated. Meat is of value for nourishment and for the neutralization of acid, but the extractives are stimulants of secretion. Recent observations indicate that the symptoms in hyperacidity are due, not to the amount of acid simply, but more largely to the excessive secretion. In hypersensitive conditions of the stomach, the extractives may excite the secretion of more gastric juice than is needed for digestion of the meat and more than it is able to neutralize, and in this way may be the occasion of suffering. The exclusion of these extractives is, therefore, very important in hyperacidity and the use of meat extracts, gravies, soups, etc., should be avoided. This negative therapeutic result, which consists in the removal of an exciting cause is, however, outside the scope of our subject, which includes properly the positive use of a form of food to produce a definite result. This positive use, however, comes into play when we use the extractive to stimulate the secretion. This exemplifies the utility of beef tea, meat extracts, etc., which scientific physicians have been inclined to discard because they possess no nutritive value. The use of beef tea or extract, or of meat soups, to stimulate the secretion in chronic gastritis, suspected achylia, nervous dyspepsia, and other conditions of diminished secretion, has a truly rational basis. There ought to be no tonic more valuable than properly-prepared, appetizing meats, and the gravy made from roast or other meat. This also explains the use of soup before the heavier foods.

The inhibitory influence of fats upon the secretion of gastric juice has been known for some time. Pawlow claims that this is exerted only when fat is mixed with other food. The use of fat for the restraint of the gastric secretion is a method which has been very successful. Lately, Conheim and others have introduced the use of olive oil in such a way that it becomes essentially a medicament, as much as when we employ an emollient salve to an external wound. The oil is given in comparatively large doses and unmixed with other foods, but it is not used especially for its nutritive effects.

The investigations of Cannon have shown us some of the laws by which the movements of the stomach are determined. The carbohydrates leave the stomach earlier than other foods. Fats which cause the secretion of little acid are retained longer, while proteids, which are digested in the stomach, are retained longest. The different rates at which foods leave the stomach indicate the possibility of obtaining therapeutic effects by order in which the constituents of a meal are taken. Thus, if the first part of the real meal consists of carbohydrates, they will pass quickly into the duodenum, thus lessening the burden of the stomach, which may devote itself to the digestion of the proteid part of the meal. If, on the other hand, the proteid be taken first, it accumulates in the pyloric portion of the stomach and hinders the exit of the fats and carbohydrates, which must remain until the proteids have been digested. In cases of dyspepsia, it may be possible to facilitate digestion by regulating the order in which the various kinds of food are taken. While these investigations of Cannon have not, as yet, been the subject of clinical report, it is to be hoped that the practical application of them will give good results.

Investigations in regard to the molecular concentration of the stomach contents have thrown some light upon the movement of the stomach contents, and the interest attaching to this problem will, it is hoped, lead to further investigations. These investigations show that mineral waters do not leave the stomach until their concentration has approached the concentration of the blood. If the original

concentration of the fluid was higher than that of the blood, it is lowered by the secretion from the stomach, or by the swallowing of saliva. If it is too low, the compensation is brought about, not by the absorption of water, but by the secretion of solids, principally chlorids, through the stomach wall. While mineral waters can hardly be called food, we may regard ordinary water as food, and the application of the above fact appears when we consider that, in giving the concentrated solutions of salts, we may expect the solution to remain in the stomach until it has reached a sufficient dilution. But if it is given in a solution, whose concentration approaches that of the blood, almost immediate expulsion into the intestine may be expected. On the other hand, it would appear that drink of a lower molecular concentration than the blood, must stay in the stomach until its specific gravity has been raised.

Similar facts have been ascertained regarding ordinary stomach contents, so that we can understand how a dry diet requires dilution, either by saliva or by the secretion of the stomach, until it approaches the concentration of the blood. Such a diet may, therefore, be prejudicial in hypersecretion, and, perhaps, also in motor insufficiency in which it was recommended. It will be worth while to try it, however, in cases where the secretion is diminished.

In the intestine, we find a field in which the application of food for therapeutic purposes are numerous, notwithstanding the fact that many processes going on in the intestine are not clearly understood. Pawlow has learned that fats stimulate the secretion of bile, and acids that of the pancreatic secretion. These facts give us indications for the therapeutic use of those substances. Without doubt, one of the chief uses of oils, in torpidity of the liver and in gallstone disease, is the stimulation of the biliary secretion. The use of hydrochloric acid in achylia is largely beneficial by exciting the activity of the pancreas. The acid of fruits has a similar action.

The most important therapeutic use of foods in intestinal disorders are for the treatment of constipation, diarrhea and intestinal putrefaction. These uses of diet are by no means new, and it is only that we may show the strictly medicinal and not dietetic action of the agencies employed, that I desire to dwell upon them. The dietetic treatment of constipation rests essentially upon the presence, in certain foods, of laxative principles. These have been classified by Boas, as follows: Water, sugar, fats, acids, salt, indigestible residue. To these we must add volatile and fixed fatty acids, produced by fermentation of the carbohydrates. In selecting foods for the treatment of constipation, we must have regard to these elements.

Water, sugar and fat are true nutritive elements, and it may be said that it is only by giving them above the needs of the body for nutrition that they become therapeutically active for the treatment of constipation.

Acids may, on the other hand, be regarded as foreign to the system and strictly medicinal. Of the acids available for this purpose, the preference is to be given to acetic and citric acids as milder in their action, which is especially to be desired in chronic constipation.

Salt is recommended by Boas, to be given in the morning on an empty stomach, so that we may regard it strictly as a drug and not as a food. It has been recently stated that a pint of normal salt solution, taken on an empty stomach, is a certain intestinal evacuant. Recent studies of the action of chlorids in nephritis and other organic affections point to the need of caution in the use of salt for this and other purposes. Indigestible residue is of two kinds, viz.: the fibroid tissue of meat and the cellulose of vegetables. Its action must largely be described as mechanical, making the feces bulky. The cellulose also includes in its interstices a certain amount of starch and other fermentable carbohydrates, which serve as pabulum for the nourishment of micro-organisms. Mechanical irritation is to be avoided in certain cases, especially in neurasthenics, with a tendency to spastic constipation, so that here again we have a reason for a thorough understanding of our remedies, even if they are nothing more than turnips and cabbage.

The use of diet to furnish food for micro-organisms, finds several applications.

and indicates the nicety with which the modern therapist needs to use his materials, in order to control the complex processes going on in the bowels. The normal stimulus to the action of the bowels is produced by fermentation in the lower bowel, by which gases and acids are formed from the carbohydrates, which have escaped the action of the digestive ferments. In order that this may take place, the digestion of carbohydrates must proceed at such a rate that there will still be a residue left for the action of micro-organisms. In the constipated individual, digestion proceeds too rapidly, starch is absorbed before the feces have reached the lower part of the bowel, and the requisite amounts of gas and acids to act as the normal stimulus to defecation are lacking. The aim of the therapist should be to retard the digestion of starch. Several ways of accomplishing this object may be suggested: 1. The carbohydrates may be supplied in excessive quantities, but as these substances are easily converted into soluble forms, it is difficult to exceed the intestinal power of absorption. 2. The carbohydrates may be administered in the form of green vegetables, roots, etc., containing much cellulose, by which they are shielded from the action of the digestive ferments. This is the rationale of the ordinary dietetic cure for constipation. It is useful, but not always successful. 3. Hydrochloric acid may be given, to restrain the activity of the salivary digestion, so that the starch may pass from the stomach largely undigested. The use of hydrochloric acid may, I believe, be quite serviceable in cases of achylia where constipation is present. 4. The use of raw food is rational for this purpose. I have endeavored to make a salad of raw potato, finely grated and mixed with finely grated apple. Such a salad, however, is not palatable to many people. Raw turnips ought to be tolerable, as many people eat the white turnips in a raw state with considerable relish. I understand that a certain advertising physician, in New York, recommends raw oatmeal for the purpose of overcoming sluggishness of the bowels.

A. Schmidt has proposed the use of agar as a substitute for starch, and finds that this substance produces a bulky material, slowly soluble in water, which forms an excellent culture medium for bacteria. He reports good results with this method.

For diarrhea, the positive uses of food are not numerous. Some vegetables and fruits have marked astringent properties. Boas said that one can constipate with a strong cup of tea or coffee, or a glass of port wine, as surely as by a dose of opium. These remedies are, therefore, to be avoided in constipation, but fulfill a positive indication in diarrhea. Many cases of diarrhea depend on a disturbance of the stomach in which hydrochloric acid is deficient or lacking. In such cases, the connective tissue of meat fails of digestion and becomes a mechanical irritant. This undigested proteid residue undergoes putrefaction readily and brings about the production of irritating products which occasion diarrhea. The proper preparation of meat by long cooking, boiling or stewing, so that the connective tissue becomes gelatinized, obviates these dangers to a large extent. The process of putrefaction may also be retarded by a proper balancing of the various elements of the food.

The control of putrefaction in the intestine is better accomplished by diet than by medicine. Many therapists put little reliance in intestinal antiseptics. To change the soil on which the microbes of putrefaction flourish seems more desirable than to attempt to exterminate the intestinal flora. It has been shown that in a mixture of carbohydrates and proteids, ordinary fermentation of the carbohydrates precedes putrefaction of the proteids. If the proportion of carbohydrates be increased, it is possible to displace the noxious putrefaction by the comparatively harmless fermentation of carbohydrates. For the accomplishment of this purpose, a milk diet is frequently of great service and its value is due to the milk sugar. As the percentage of proteid, even in milk, is higher than is necessary, the addition of carbohydrate in the form of sugar, starch, or toasted bread secures a better balanced diet and one less liable to putrefaction. The liability of proteids to intestinal putrefaction should be borne in mind in arranging the simpler diets where a large amount of a single food is to be used. A diet consisting largely of eggs, as used in some sanatoria, needs to be balanced by a sufficiency of carbohy-

drates to keep the putrefactive organisms busy and prevent their attacking the proteids.

Many other therapeutic actions of food could be mentioned in connection with the function of other organs, such as liver, heart and kidneys, but what I have given, is, I think, sufficient to illustrate the proposition that we should prescribe the diet, not merely with reference to the furnishing of sufficient nutriment, but also with regard to the effect which the various foods may have upon the specific function of the different organs.

982 West Adams Street.

SOUTHWESTERN DISTRICT.

The annual business meeting of the Southwestern branch of the Chicago Medical Society was held June 5, 1906, at the Grace Café, 540 West Sixty-third Street.

The election of officers resulted as follows: President, R. M. Parker, 3603 Indiana Avenue; vice-president, V. D. Lespinasse, 601 West Sixty-ninth Street; secretary and treasurer, C. H. Lovewell, 5500 Halsted Street; official reporter, A. E. Mowry, 3505 Indiana Avenue; councilor, F. R. Green, 5627 Prairie Avenue.

As so much of the time of each meeting has been taken up in the discussion of business matters concerning the society, Dr. C. H. Miller moved that the constitution be so changed that the business matters pertaining to the society be disposed of by a board of councilors, composed of the president, secretary, three ex-presidents in line and two members of the society to be elected each year.

The motion was carried and Drs. H. R. Boettcher, 6306 Harvard Avenue, and H. H. Mather, 7847 Normal Avenue, were elected as councilors for the society.

ALBERT E. MOWRY, M.D., *Official Reporter.*

SOUTHERN DISTRICT ANNUAL MEETING.

The annual meeting of the Southern District branch of the Chicago Medical Society was held Thursday, June 28, at 756 East Forty-seventh Street, about forty members being present. After the reports of the officers of 1905-6 were read, the election of officers for the coming year was held. Dr. Frederick A. Besley was elected president, Joseph L. Miller, councilor, and W. S. Harpole, secretary.

The medical program followed and consisted of a paper on Pelvic Infection by Dr. T. J. Watkins, which received a full discussion at the hands of Drs. Frank T. Andrews, Wm. Cuthbertson, Wm. Fuller, H. D. Peterson, Charles E. Paddock and others.

W. T. HARPOLE, *Secretary.*

PHYSICIANS' CLUB OF CHICAGO.

A regular meeting of the club was held at the Sherman House, Tuesday evening, April 24, 1906, with Dr. C. S. Bacon in the chair. The subject for discussion was The Relation of the Physician to Compulsory Sickness and Invalidity Insurance.

Dr. Bacon, in calling the meeting to order, said: The subject that the club has under discussion this evening, compulsory sickness and invalidity insurance, is one that is particularly appropriate at the present time. Physicians are interested in it, as every citizen is. It has a very broad bearing on the welfare of the state. But we have this special interest in the subject: that it also affects particularly the medical profession. The members of the Chicago Medical Society have been considering some of the subjects related to this. Some of the economic and business problems of the medical profession have been brought before the attention of the societies this year, particularly the question of contract practice. We are trying to reach some wise decision that will be of benefit to the physicians and society, and that decision can only be reached by settling the matter in a very broad way. The subject of compulsory insurance is one that must affect the medical profession, for it has a decided bearing on contract practice. Sickness and invalidity insurance must require some co-operation in some way or other from physicians, and physicians must be employed. If a measure that has the sanction-

of the government and the authority of the state, which requires the employment of physicians, comes into existence, it is probable that, like the present indemnity companies, it will try to secure the services of physicians at low, unfair fees. Hence we may have a very acute interest in this question. Without taking any further time, I am sure we are all extremely fortunate to have with us to-night such a man as Professor Henderson, who has given this subject so much attention. I introduce to you Prof. C. R. Henderson, of the University of Chicago.

Prof. C. R. Henderson:—I shall take up two aspects of workingmen's insurance. The first aspect is that which makes its appeal to you simply as good citizens interested in the welfare of your fellow men, certainly as much as any other profession among all the learned professions, and I make my address to you upon that aspect of it with the absolute confidence that what I have to say to you as citizens will receive a most cordial and kindly hearing. In the second place I shall speak of your professional interest. I shall not attempt to cover the whole of this great problem, which requires volumes to discuss, but shall select certain aspects in which you are more particularly interested. The subject before us is not entirely new, but intelligent men among us have not yet given it that consideration which it has received on the other side of the Atlantic. You are aware that the United States in this respect is the most backward nation on earth, that little countries like Denmark and Scandinavia are in advance of the United States in taking social care of members of the working classes. The United States, however, will probably in time make a more rapid advance in this regard than any other nation. At least we flatter ourselves that it will do so.

My friend, Professor Shorey, the cultured professor of Greek in the University of Chicago, is fond of telling the story of a Western man who said of the United States: "We ain't much cultured in the West, but when we get it we will make it hum." And when we come to the point where we undertake workingmen's insurance in earnest it will probably grow more rapidly than it has in other countries.

In a recent letter Dr. Zacher, editor of the series on Industrial Insurance Abroad, said in all frankness that while Germany was at present much in advance of the United States in this field, Germany has even now much to learn from the United States in regard to certain methods. It is known to you and it is stated on the program of this evening that I am secretary of the Illinois Industrial Insurance Commission. While that is true, I want it understood that I am speaking simply as an individual. This commission has only had a few meetings and has reached no conclusion and it has no policy to announce. What I shall say to you will be said simply upon my personal responsibility. We are doing serious work and by the beginning of next year we hope to have something in shape for the consideration of the governor and of the legislature.

The able actuary, Dr. Frederick L. Hoffmann, of the Prudential Insurance Company, says that the workingman is a national economic asset. He is worth at least \$300 a year and ought to be able to work from 15 to 60 years of age, about forty to fifty years. Among the things which prevent his efficiency, of prime importance, are disease and accidents. In taking care of the workingmen we are not so much bestowing charity as making an investment. This is the standpoint which is being taken more and more by professional and business men. When we take that standpoint we remove it from metaphysical speculation, from the philanthropic and charitable sphere, and put it upon a business basis. A great majority of the people in our large cities are an economic asset; their health and longevity are matters of national economic importance. The causes of diminution of industrial efficiency can be found and measured. In considering these we need your help. It is an indispensable element in the progress of workingmen's insurance in this country. First of all, we want to get accurate, scientific and precise knowledge as to the facts in regard to the causes of sickness, especially of occupational diseases, which interfere with the public health, and also as to the causes of accidents. We have not adequate machinery for this at present. If we could have medical supervision of factory inspection and legal arrangements made for it undoubtedly we would find many things in regard to the causes of accidents and

sickness which we now know are deliberately concealed from us by business men because of the antiquated liability law which is cursing our whole nation to-day. The law almost compels great manufacturers to conceal all causes which ruin people's health and which subject them to the danger of accident and the loss of life. That is familiarly known. I could gather plenty of evidence on that point from men in this room. There are those who are interested in exploiting these facts for private interests, as certain lawyers and others.

We need to know, for the economic progress of the human race, every cause of disease that is inherent in occupation or in the habits of the working people. We have a right to know. The workingmen have a right to know. We can not bring about sensible legislation without it, and protective measures or protective legislation must be based upon precise and comprehensive knowledge of the causes of both sickness and of accident in connection with industry, and if inspectors can not give us these facts without causing unfair litigation, then the manufacturers must be legally protected. If they give us full statements of the causes of sickness and accidents of occupation, we must protect them from undue financial burden in connection with the exposure and giving of this information. We can not proceed to protective and insurance measures unless we have this knowledge of the causes of accident. This is a matter in which medical men are directly interested as good citizens. We should have a code of protection, and in the formation of that code of protection against disease and accident in connection with occupations the medical fraternity might be in a commanding position and represented with the administrative authority. We have imposed upon factory inspectors in many of our states an impossible task, which exposes them to undue temptation and frequently leaves the workingmen with defective protection. The human race has arrived at that stage of knowledge where we can construct a systematic code of protection against accidents and disease. In the formation of that code the medical profession will have a large share. We should have such a code in the state of Illinois.

In the education of the public concerning the prevention of tuberculosis, one of the most serious causes of invalidity, you have rendered a great and splendid service, for which, as one of the citizens of this commonwealth, I take this occasion to thank you most heartily. It is one of the preventable diseases and it is largely connected with occupation.

Mr. Hoffmann gave some figures in regard to the deaths among stonecutters caused by the irritating particles of their materials of work, and the evil is in great measure preventable when the employers know about it and think about it. Sometimes the method of teaching must be by legal requirement, because there are some people who will never learn what the ten commandments mean, or the beatitudes, until they are formulated in the law of the state and enforced by penalty.

The policy of insurance means that every workingman is exposed to several very great calamities which may befall any one. As a matter of fact, they fall upon a certain average number of persons, varying with the different occupations. All of them are causes of economic loss and social distress, loss of time from sickness, loss of wages from accident, loss of income from invalidity, unemployment and old age. If I can put before you distinctly what Germany, the most advanced nation in this respect, has achieved, I shall have accomplished my object. According to the German notion, a part of the risk of sickness belongs to the community. For instance, one-third of the sickness from tuberculosis may be said to belong to the community, which can be prevented by the community in great part. Many causes of sickness can be partly prevented by the community. The workingman carries two-thirds of the premium and his employer pays the other third. But does the employer pay it? Primarily he does, but a large part of it comes back upon the people of the nation in the price of products, and often the workingmen have to carry much of it, but at any rate the burden is divided. A recent Michigan report of labor shows that a small per cent. of the accidents reported in a certain line of industry was due to defects in the protective measures required by law, and so the liability law protects very few workmen. Most accidents are due to the *risque professionnel* and unavoidable. A certain number of men must

each year have their hands or feet crushed; they lose an eye or both eyes or are incapacitated for ten days, two hundred days, or, it may be, for the rest of their lives. In a country with an insurance law the expense incidental to these accidents is charged first to the employer. He pays all premiums, because he is considered the only man who can distribute the loss for the community, and employers combine their efforts through private companies or mutual companies to cover the risks.

In the case of invalidism and old age, the workingmen pay half the premiums, the employers pay the other half and the empire adds a small subsidy for the old people or invalids who receive pensions. I do not say that this system can be introduced in the United States, but the principle is already introduced. It is being rapidly extended under the pressure of enlightened intelligence in regard to the causes of disease and accident, and the share of responsibility and duty on the part of the community itself.

In 1897, after having tried to amend, repair and tinker the common liability law, Great Britain finally passed the compensation law, which provides that the employer should pay a certain indemnity for a certain time, or in case of death a certain lump sum for persons injured in his employ. That threw the burden on the employer, and the natural result was that in Great Britain employers banded together in mutual insurance companies. Already railroad insurance departments have been formed in this country. A large part of the cost of solicitation and collections can be removed by the simple device of making a contract with men for the premiums and taking it out of their wages. In the case of one ordinary employers' liability company it is said 50 per cent. of the premium goes to pay for solicitation of business, 10 per cent. goes to profits and cost of administration, and only 40 per cent. goes from the employers' liability companies to the workingmen, and of this 40 per cent. lawyers get 33 1-3 per cent. (Laughter.) If we could begin with the English compensation law we should have a certain amount of compulsory insurance, although there would be nothing said about insurance in the bill. Under such a law the employers of the state would be competent to organize their own insurance schemes, and there would be plenty of insurance companies on the ground ready to assume risks if such a law went into effect. This was what was done in England and similar results would follow here.

In regard to sickness insurance, it will take longer to bring it about, but that will be the logical result of accident insurance. During the first thirteen weeks sickness insurance ought to care for those who have sustained slight injuries. As we have no sickness insurance organized in this country, the accident insurance might begin with the second week. There are at least a half dozen different methods of insurance already effectively at work among us. The railroad corporations have already organized sickness and accident insurance, and some of them old-age pensions, and are doing it very well. I do not think their plans are altogether just, but they are an immense advance over what we had before. Some of the trades unions have thoroughly sound methods of dealing with sickness and invalidity, and some of them have old-age pension schemes. There is no reason why the principle of the fraternal societies should not be extended much further than it is.

Dr. Bacon has called attention to the matter of contract practice, which is liable to abuse. It has been abused, but it is bound to grow if it is economically sound. It has vindicated itself in certain forms, in connection with the sanatorium, the fraternal insurance form, etc., but you do well to bring the practice under careful control and direction.

I now wish to turn to the second aspect of the question, namely, how will insurance affect your professional interests? Let us say frankly that if workingmen's insurance is established on a wide scale for some time to come the medical profession will probably at certain points have to bear a share of the public sacrifice. I believe you are ready to do it. I do not want to conceal my own conviction as a student of this subject when I say that the medical profession, with the employers and general public, will have to carry a part of the load, and the rates and fees may be improperly fixed, and the suffering of the younger members of the

medical profession may be increased in that way. The problem ought to be met in advance. It ought not to go before the medical profession in an unintelligent way. It should be met frankly and candidly by the state and the evils that have crept into the German administration should be guarded against in advance. Medical men in Germany are not properly paid for their services. There is general complaint and they are trying to remedy it. I read a report of physicians sent to the Vienna Congress of Insurance asking more adequate compensation for medical services. But in some ways your burdens would soon be lighter under a good system of insurance.

In the first place, the charity cases will be eliminated under this system. There is no profession which is so heavily burdened with charity cases as the medical profession. There is no set of men giving away so much of their services to the poor as the doctors. Something will have to be done to dispose of charity cases, which do not belong at all to insurance. Workingmen's insurance is not pauper insurance. You can not insure paupers. They have to be cared for by public or private relief. If we could eliminate all except the capable from getting into the working class, who have regular wages and can lay up something for times of accidents, invalidism and old age, we could at once relieve the medical profession of an actual burden and pass it over to the charity institutions, where it belongs, or to the insurance organizations. Most of you derive most of your income from the well-to-do class and the wealthy. They are not in the system of social insurance. They can buy their insurance from companies; they do not need our sympathy nor attention, and they do not concern us. Insurance schemes have to do with people who are earning per family \$350 a year up to \$900.

Insurance is a national or state method of seeing that doctors get their pay and that industrious workmen are not pauperized. You can not do your work unless you are well paid. Any commission that brings a law before the legislature is bound to consider every social interest that may be possibly affected by new forms of legislation. In making plans for compensation or compulsory sickness insurance you should be represented in the councils which will draw up the law itself. In the second place, you should be represented in the administrative organ of the state which supervises the operation of the law when it is passed. Your interests should be protected at every point. Insurance would place you, so far as your practice among the working classes is concerned, in a more dignified, useful position than any method that has ever been devised. At present you come to us and try to keep us from dying. We call you in whenever we have a pain. We pay you simply to cure us or to mend us. Sometimes you succeed, sometimes you do not. You may keep us running a little longer. That is what you are paid for. Here is a new branch of your science and of your professional service—preventive medicine. Preventive medicine is one of the most sublime facts or moral heroism in human history. I believe the medical profession under the present circumstances are probably already carrying a great deal more than their share of the financial burden simply because they are putting themselves out of business. In social insurance a new principle enters. You are to be paid for preventive medicine, not merely for curing and mending, but for preventing disease. You ought to be paid, and you can not continuously do your work well unless you are paid for it. You take a great step in advance when you increase industrial longevity and industrial efficiency. I am not pleading for the pauper. I am talking about the self-supporting industrial group and am keeping that class before you. These men ought to pay you and they desire to be independent. By social insurance workmen will be able to pay you, not only to be mended or cured, but also to compensate you for preventing tuberculosis and other diseases. Perhaps there is no man who is better informed on such points in the United States than Frederick L. Hoffmann, who deals with hundreds of thousands of these cases. He asks that our boys and girls in industrial life shall be examined before employment and periodically afterward by doctors. Why do we go to a dentist every once in a while? To save our teeth from becoming too badly decayed. Why do we consult an oculist? Because we find that we can do better work if defects are corrected in time. If every man, woman and child were in-

sured and examined by a physician twice a year, many of them would not only be prevented from becoming sick, but every atom of muscle and brain would be worth more to the nation.

Society can not expect you to practice preventive medicine thoroughly and permanently without reward. In order to have capacity to serve a community a professional man must have income. The income we get is simply an opportunity to do something for our fellow men. You can not treat people day after day, as a steady thing, without being properly compensated for it. You know that a man, if he does not pay you cheats you, and he is degraded by it. When a doctor is properly paid for his services rendered to workmen it helps him to build up and to make more efficient wealth producers. And industrial insurance provides the necessary funds without begging.

In closing I wish to say that I need information for our Industrial Insurance Commission, and I ask you to write me letters giving substantial facts in regard to the causes of sickness and accidents, and any information or views which you can furnish me will go before the commission.

The Chairman:—It is very evident that the subject of insurance is a live one and is bound to come in some form or other. It is also very fortunate that, as the secretary of this commission, we have so well informed and so broad a man, who understands the medical profession so well as he (Professor Henderson) does. It is also fortunate that this subject has not come up before, but comes up now, when the reorganization of the medical profession has progressed so far as to give it an influence. The medical profession itself will have something to say on this subject, particularly in the working out of new laws at Springfield. Heretofore laws have passed the legislature before hardly any members of the medical profession knew anything about them. Now we are getting ready to meet the conditions. In this city we now have such an organization of the profession that we can bring our combined influence to bear. By the action of the council of the Chicago Medical Society three months ago its committee on public relations and its organization committee, consisting of one representative from each of the twelve districts of the city, were authorized to take what measures are necessary to carry out the will of the council in regard to any legislative measures, either national, state or municipal, so that now we have a machine which can be made a powerful one. Through this organization committee the whole profession can be reached in a few hours to carry out the will of the society through its representative body, the council. Not only that, this organization can be used to get the opinions of the profession. It can be used to obtain a referendum, and so in the future the profession can and will be represented by its own representatives, not, as in the past, by individuals who, for one reason or another, might put themselves forward and be counted as representatives when perhaps they do not at all represent the profession. Therefore I say it is fortunate that this subject has not come up until the profession was so organized that it has a good deal to say in the discussion of the matter. We should see that the suggestions made by Professor Henderson, that members of the medical profession should be on the commission to administer the law, be adopted, and thus we can secure action that is wise and just to us, as well as to the society.

The discussion this evening has two objects in view, one of which is to present facts and important points to Professor Henderson from those that are present. The other is to enable those present to obtain from him, through questions and discussions, information for themselves. We have with us representatives from many institutions. Although the number is not large, it is certainly representative of the profession of this time. We have with us the president of the State Board of Health, Dr. Webster, and the commissioner of health of Chicago, Dr. Whalen, and likewise representatives from insurance organizations and railroad companies. The discussion will be opened by Dr. Billings, who represents, I suppose, neither the health department nor any other organization, but who is a specialist in matters that concern the public.

Dr. Frank Billings:—I did not expect to speak to-night, but found only yesterday that I was assigned to open the discussion. I am sorry for this because,

while I am very deeply interested in the subject and have read to some degree upon it, yet I do not feel capable of discussing it intelligently.

First, I want to thank Professor Henderson for what he has said. I think we have all learned more of the principles of invalid insurance from him than we could have learned in a long period of time from other sources. Those who are well acquainted with the compulsory insurance against invalidism and old age in Germany, through visits to Germany or from reading the German medical journals, know something of the subject of insurance as it is carried on in that country and of its effects upon the community and on the medical profession. In Germany there is something wrong with the principles of insurance of this kind, because it receives the condemnation of the great body of the medical profession there. Its main faults are that the fees to the doctors are so small as to have a pauperizing effect on the profession, and, second, the principles of the insurance do not permit of a personal choice of the insured in the selection of the physician. I have learned that in many instances the fee is not more than 10 pfennigs ($2\frac{1}{2}$ cents). The physician is chosen by a lay commission for any given community or body of insured, and this permits of political favoritism in the choice of physicians. So great became the objection that at Leipsic the medical profession formed a bund and later many of the profession in other parts of the empire joined in a united movement agreeing not to attend the insured individuals. I understand that the physicians petitioned the reichstag to modify the law governing such insurance in reference to fees and also in reference to the matter of assigning physicians to groups of persons insured.

In England we learn from the *Lancet* and *British Medical Journal* that there is also much complaint from the physicians in regard to the law for attendance upon people insured against invalidism and also for the attendance upon employés of corporations and upon the poor in certain districts. In many instances the fee there does not amount to more than one or two pennies. It has been stated that where the physician receives practically no compensation the tendency is to slight the work and to give superficial attention to the patients.

We must admit that we shall be forced to face this problem of insurance against invalidism and old age in this country. It is bound to come and the medical profession must study the subject and attempt, if possible, to so modify the principles of the law, as it shall be established here, that it will work as little hardship as possible to the profession and at the same time be efficient. We have already a contract system in this country which is in many ways objectionable. Large iron mills, steel mills, manufactories, etc., hire physicians by contract. Last week I was in consultation with a physician who stated that he had had considerable practice in the planing mills along the river; that he had received 50 cents from each employé per month under contract with the corporation employing the men; that recently he had been superseded by another doctor who secured the work by contracting to do it for 25 cents a month per man.

The adoption of this insurance will be an especial hardship upon the physicians in the rural communities. In the country it does not cost a laborer who earns \$400 or \$500 a year as much to live as in the city, and he is, therefore, able to pay the country physician a fee, which is important to the doctor. To take this income away from the country doctor would mean a good deal of hardship. In the city the earner of the above-named sum would spend it all for his living, and the doctor would receive nothing, as a rule, so that the city physician would not be as much affected as his country brother.

All of these embarrassments, as they appear now may not seem so great to us when we have had a better opportunity to study the principles of this form of insurance.

Certain it is that now the doctors take care of at least 50 per cent. of the people who earn from \$300 or \$400 to \$800 a year without compensation, for such people when ill have little or no money, and in the city especially they go to the hospitals for free treatment. If, under this principle of invalid insurance, such people pay into the fund which shall be applied to their care when ill, the physician will have an opportunity to secure something for his services. As he will receive, however,

more for keeping these people well than for attendance upon them when sick, such insurance will be of the greatest importance as a preventive measure. It will also result, in all probability, in the erection of hospitals for workingmen, which will be conducted upon more economic grounds than our present municipal hospitals, and the latter will be relieved of the burden of taking care of the people who come under this class of insurance. This will directly relieve the general tax which all of us pay for the maintenance of our general hospitals. It ought to have an effect, too, upon state institutions and enable them to be conducted in a more scientific manner than they are now, because a greater number of physicians and nurses would be employed for each.

In one of the state institutions which I have recently visited there were 1,507 inmates, as it was stated, and I found three physicians, including the superintendent, to look after this enormous number of people. Consequently it was not possible to differentiate the inmates or to make proper examination of them. I feel quite sure that we shall adjust ourselves to the new order of things and that finally it will not become a great burden to the medical profession. It will be unquestionably of great economic benefit to the community as a whole, and if, as Professor Henderson thinks, and I believe he knows, it shall prove a preventive measure of great value, then we shall be encouraged to join with the remainder of the community in helping to establish it in this country.

Dr. Arnold C. Klebs:—The subject of insurance has interested me very much from the standpoint of prevention of tuberculosis, and although I have some statistics on the subject I am not going to bother you by reading them. They have a certain fascination, however, and they are important, but, as Professor Henderson has said, they are troublesome and dry in meetings of this kind. The way I became interested in insurance was through tuberculosis work in this city. We have here, as you know, an institution which tries to educate the people on the question of prevention of tuberculosis, once the tuberculosis committee of the Visiting Nurse Association, now the Chicago Tuberculosis Institute. This work, if it is to reach many people, will cost a lot of money. It is a serious problem how to get this money. I have to go around and beg and beg, and I have carried the burden practically alone of getting money together for carrying on the work on a comparatively small scale. When we consider how many people we ought to reach by an educational campaign we can not hope to get money enough in this way for years to come. We may stir up public sentiment by more or less sensational newspaper articles. We can get matinees and charity entertainments, but by and by these enthusiastic and therefore spasmodic resources will fail us. A continuous and sustained effort is absolutely needed if we would accomplish anything against tuberculosis. Therefore we are looking around to see what is being done in other countries. There is the glorious example of Germany, with its sickness, invalidity and other forms of obligatory insurance. I was delighted to hear Professor Henderson dwell especially on the impetus of insurance work in Germany as bearing on preventive medicine. That is to my mind one of the most important. I have talked to railroad men on the subject of their sick benefit insurance, and in doing so some interesting points were brought out. I said to some of them, frankly, "I think your first idea in getting up a sick benefit scheme was to advertise yourselves as charitable men; then, by and by, you came to realize that it pays you to do it, because, first of all, by preventing accidents you save sick benefits." They go to work and determine scientifically what kind of accidents will happen in certain departments of the railroad, and what they will have to pay as benefits to those who are injured. This induces them to introduce safety appliances; the railroads save money by these appliances which they can utilize for other purposes, so that the financial gain by this method of prevention of accidents is apparent.

Among the diseases that attack the laboring man tuberculosis is the most important. We have become accustomed to have tuberculosis with us, and on that account we do not pay sufficient attention to it, but considering it from every point of view tuberculosis is by far the greatest tax on the community.

The German sickness insurance law was passed in 1883; after that, in 1889,

the invalidity insurance law was passed. Sickness and invalidity insurance had to face a tremendous financial problem, in that it was found that one-half and more of those insured were tuberculous. Tuberculosis is a most tremendous tax, not because it kills people, but because it disables them for such a long time. No consumptive dies as a man dies from pneumonia, after a few days, but he dies after being disabled for a year or possibly five years. He is partially or totally disabled. There is where the asset of which Professor Henderson spoke so eloquently is reduced. Invalidity insurance was recognized and utilized for the purpose of building sanatoria. It was proven, by the first sanatorium established by Brehmer and Dettweiler, that with thorough hygienic management of these cases the insured could be brought back to earning capacity after a certain length of time. After an average treatment of three months these people were restored to an earning capacity in fully 80 per cent. But that means not only the restitution of men to their earning capacity; it means that every one of these men has been educated in the principles of hygiene and goes out as an apostle of this teaching. The medical profession must learn to recognize what Professor Henderson has said: that prevention is our real, our greatest task. We may prescribe medicines and we may operate, but where we really do good is in the matter of prevention. That is our highest task, and a scheme which will put the great mass of people, the workmen, on a basis of self-defense against disease, making them able to pay by deducting small amounts from their wages in time of health, will remunerate the medical man for preventive work. I want to add this: that since sanatoria have been used in Germany, under the insurance plan, they have found that they needed additional institutions; they have established open-air day camps, simple, inexpensive institutions, where patients are treated, sometimes before a definite diagnosis can be made of tuberculosis. They are sent to these places for a rest. They have a shack where there is a kitchen and some board shelves; they have their meals out of doors, and go home at night. On a similar plan they have established out-door schools. They have other institutions very simply constructed, so-called convalescent camps; there the patient is sent from a sanitarium and continues to live an out-door life, and is also taught agricultural pursuits. The open-air sanitarium is by no means a panacea for the treatment of tuberculosis; when a patient returns home to the same bad hygienic conditions and occupation, he often is again disabled. It was found necessary for such a man to change to some other occupation; and this is done in these camps and they have thus become an important adjunct to the sanitarium plan. The whole scheme, especially the provision for the invalid's family during treatment, is certainly one of the most important means against pauperization.

As to a scheme of this kind affecting the medical profession, I fully agree with Professor Henderson that it will not be detrimental to any great extent to the medical profession. It has been to a certain extent in Germany; it has affected a certain class of practitioners, in the country especially, but this is being improved rapidly all the time, by bringing these patients under institutional treatment. More and more, as soon as a man becomes disabled he is sent to an institution. The insurance scheme in Germany has shown that such institutions can be maintained at a small expense, with the greatest benefit possible to the community and the working man. In this way they will get a more scientific and better line of treatment, and there will be better compensation for the physician.

Dr. Billings has pointed out that we will be paid for preventing disease. We are paid now for sawing bones and giving pills, but for prevention, which is the most important aspect of the practice of medicine, we are not paid, and I believe firmly that such an obligatory insurance scheme will further this more than anything else.

It is usually thought in America that this German insurance scheme is an obnoxious paternal system. As a matter of fact, it is not at all. The government has established it, but, as it is now, it is practically run by the working men themselves; the government has no direct interest in it. The working man and the employer pay a certain share and when needed the employé draws certain benefits. With regard to the magnitude of the German sick insurance scheme, let

me tell you that from 1885 to 1903, they have paid out in sick benefits about three hundred million dollars. For benefits under the invalidity insurance law from 1891 to 1903, they paid out about two hundred million dollars. You see, these are tremendous sums. Under the invalidity insurance, there were treated in the last eight years about 101,000 patients, in sanatoria alone 90,000, at the average of three months and at a total expense of 35,000,000 marks. These are big sums, when we consider that they are made up by the two-thirds paid by the working men and one-third paid by the employer; it must mean raising the working man's value as an asset for the medical profession, and if we, as Professor Henderson has said, with our technical superiority in the management of benefit insurance by certain companies, are going to undertake anything similar, the medical profession must ultimately be benefited by it, not only financially, but by raising its standards in every way.

Dr. Fernand Henrotin:—It was very interesting to hear Professor Henderson on this subject. It was not so many years ago, when the state universities came into the work, that the older universities recognized the necessity of broadening their work, and Professor Henderson came on the field about that time, and took a broad view of the scope of what we call a university education, according to our modern understanding, and his name became particularly well known to many medical men, so that any ideas he puts forth should command general attention, for his views are always known to be valuable.

The subject of the evening is the relation of the medical profession to compulsory sickness and invalidity insurance. It is a difficult problem. The fact is, compulsory sickness and invalidity insurance are bound to come. It is proper that they should come. It is a part of the development of our republic and of the republican form of government. The government depends upon its unit, the citizen, for its entire management. Each man must do his share or the republic will not stand. How to get a body of men to do their share is another question, and problems are confronting us every day that threaten to shake the stability of the government. There are nefarious schemes of all kinds. We have municipal ownership questions, and things of that kind, in which the government and civic corporations propose to go into business. These schemes sometimes concern the individual citizens themselves. But the care of the republic for its unit, the common ordinary citizen, and his welfare, is a thing that is bound to come, and we can never control the masses until we bind up the material welfare of the individual citizen with the government; in other words, until we put something of our bread and butter, something of our pocketbook, in the government. When it is there, we will all be good citizens; we will not be good citizens until that time comes. This is one of the processes, one of the things that are bound to take place. In a government like this, we can not have anything else if we are going to stand and have any degree of happiness in the future. The relation of this form of insurance to the physician is a difficult problem. It brings us physicians face to face with that unfortunate item of contract work. Contract work is allied very closely to the work of the physician and to the subject of sickness insurance, and, therefore, it is very proper that we should ask Dr. Henderson to be very careful and take into consideration all that pertains to the physician and to our profession. The American physicians will probably find a solution. According to the proposed system, there is no question but that a large number of sick people will have to be attended to at very low prices. There is no question but that doctors will have to attend them for nothing or next to nothing, and that means again in one way or another a contract system. I think, eventually, the medical profession will be able to make certain suggestions to Professor Henderson and to those who head this movement, knowing that it is inevitable, and that for the public good, it should come. All physicians, who are worthy of the name of being good citizens, will apply themselves to the problem, and eventually find methods by which the contract system and the paying of low fees, in caring for the sick and management of tuberculous people and all that class, can be done without either pauperizing the people or lowering their estimation of the physician who attends them. I have been thinking of the contract system lately, because we have had this subject up

before our societies; we have appointed committees, and when the committees were appointed, they could not agree. Some men dared to say that there was some good in contracts. The solution of the contract system will eventually take some shape, but am not prepared to say what it will be. But as these people must be attended to, I think it must take some such shape as this, that certain communities will be divided into districts; that contracts will be entered into between a city or a county, or a country district, and certain groups of doctors, who will look after the sanitation of the district, who will look after the preventive part of medicine, who will attend to the sick, who will divide the work, who will attend to this one or to that one, and who will compare notes, keep books, and decide upon the proper way to do it without pauperizing the patient or without pauperizing or humiliating the doctor. Again, there is a wrong side to this thing of putting so many patients into one bunch or group. In some of the European countries, in some places and in some institutions, they have a method of segregating patients, which always ought to be kept in mind. I do not think all patients who earn from \$300.00 up to \$800.00 a year should be grouped as one class. To keep up one's self-respect, I believe that an individual who earns \$400.00 a year ought to pay more than the man who earns \$300.00. Each man should pay what he can, and each district should have ratios in proportion to what pay they earn. In classing the five-hundred-dollar man with the three-hundred-dollar man you are pauperizing the latter. We should bear in mind that the American doctor is not going to be humiliated. Professor Henderson said that he would do all in his power to have medical men represented on such a board or commission as he has referred to, so that they may give their views, for the dignity of the profession is more or less involved. I might say, and probably I represent most of the doctors in saying, that we are willing to take an active part in every forward movement, and that every intelligent man among us realizes that this movement is one in the right direction, as far as citizenship is concerned, so far as the future stability of our government is concerned. Furthermore, there is going to be a greater movement after this. Men are naturally improvident. I have always thought there was one way in which the government and citizens could work in harmony together. Patriotism is a good thing, and it is understood by every good American, but Americans are not all good. The consequence is that all Americans are not always filled with patriotism. In some way or other the government has got to be bound up with a man's material welfare, so that he who works for the good of the government will be working for his own welfare, and, some day there will be efforts on the part of the government to go into business for the purpose of developing the material welfare of the individual citizen. For example, there will be inducements given by the government, to the ordinary people, toward what I call insurance income, insurance methods of investment, by which poorer men can insure their future, which will be guaranteed by the government. This is one of the modified methods of life insurance which the government ought to go into, and this income insurance will come some day, and this invalidity insurance system is one of the steps leading to it.

As a medical profession, we can not commit ourselves to any contract by which we are going to attend the people for the lowest possible price. We all maintain that there is a certain remuneration in proportion to the ability of the individuals, which must be paid: that this ratio must always exist; that we never give a lower price, except for cause, and that it must be distinctly shown to us that in helping people we must do nothing either to pauperize patients or to degrade ourselves.

Dr. M. L. Harris:—There are a great many phases to the question brought up to-night, but I will only speak of one in particular, with which I have had some experience.

For several years past I have been surgeon to several large corporations, and during this time have had under my personal supervision thousands of accident cases and have had a hand in distributing millions of dollars of indemnity. I must admit that some of this money at times has not been distributed in a just manner, for the reason that many of those injured did not receive, perhaps, what they

were justly entitled to, while, on the other hand, many more have received many times what they were entitled to. The reasons for this are many, but principally on account of our laws as they now exist, and because of dishonest lawyers and dishonest, ignorant doctors. Few of you realize the extent to which doctors and lawyers are combined in this work. I could mention a number of specific instances, where people have gotten upon cars for the express purpose of receiving an injury at a particular point; had taken with them witnesses to the accident; had people stationed at the corners to see the accident, and had a doctor waiting around the corner to take care of them as soon as the accident occurred, and then had the patients hustled to a particular lawyer to attend to the damage suit. I could give a number of specific instances where this particular thing has been prearranged. I could give several instances where employes in factories had prearranged to be injured at a particular time; and I could give specific instances of people suffering from ailments, who palmed themselves off as having received such ailments in a particular accident, which was certified by the attending physician, when in reality the patients were not present at the particular accident at all. When such a system as this exists, it is no wonder that corporations fight for their existence, and that is what they are doing.

The statement was made that these companies started indemnity plans as a matter of charity. I do not believe that. Corporations are not known as eleemosynary institutions. They started these indemnity schemes as a matter of economy. There is little incentive for corporations to carry on these indemnity schemes under the present laws. I have attempted to look after the indemnity plans of corporations, and while they can be carried out honestly, so that they would be an economical investment, the laws are such that there is little incentive to do it. An employé receives an injury; the company will look after him; it will pay him his indemnity according to contract, and when it has done that and has fulfilled its part of the contract, the individual turns right around and sues the company for large damages, and many times gets it. The company says: What is the use of us paying this man his indemnity to give him money to turn right around and fight us, and win a large sum of money? The man may have signed a contract that he will accept the indemnity paid him by the company in lieu of damages, but the courts say that the contract is of no value, because the man had no right to sign away his rights in that way; that what the company has paid him in the way of indemnity he was entitled to. These are most important obstacles to the success of indemnity plans at present. Before companies will continue under the present law, there must be some law enacted to relieve these companies from further liability after they have once fulfilled their obligations of indemnity under contract and there must be some just way of arriving at a just estimate of what the damages are.

At present physicians go into court and testify before a jury that knows nothing about such matters. The lawyer does not want a man to testify who knows anything about the case. He wants, first, a medical man who is dishonest, and who will testify what he wants him to, and second, he wants a medical man who is ignorant, who does not know, and the man who is ignorant and does not know what he is talking about, nearly always makes the best impression on the jury. He will testify that he believes anything to be so because he is ignorant of anything different. That is a sad state of affairs for the medical profession, but it is the truth. Until some way can be devised to determine the amount of liability and the extent of the damage done, the companies will fight for their existence; they are not going to favor indemnity. These companies are anxious and willing to pay a just indemnity if it could be arrived at justly. If we can devise some insurance laws that will do that, the companies will gladly welcome them.

I have studied the German laws on this matter considerably. While they have many excellent and valuable points, they can not be applied to American institutions at present. Many changes must be made in the American character, in the American laws and in our American ideas of liberty, before they can be introduced into this country.

Dr. Wm. H. Wilder:—There is one subject so closely allied to the one we are

considering this evening that it seems to be a phase of it. I refer to the question of the dispensary and the abuse of it, which we are accustomed to speak of as the dispensary evil. This subject is extremely important to medical men, and it seems to me there is a close relation between it and the scheme of invalidity and sickness insurance that has been set forth so ably by Professor Henderson.

I rise chiefly for the purpose of asking him whether the proposed law contemplates the consideration of the relation that the different dispensaries in large cities bear to the insurance problem. The importance of it is very evident to those of us who have anything to do with such work in Chicago, for it constitutes an immense burden for the medical profession. And, furthermore, we are not handling it in anything like a scientific way. We are not managing these dispensaries in the best way, either for the profession or the public. There is too much jealousy and rivalry among medical men as to who shall do this work for nothing, and, sometimes, an almost unseemly scramble takes place for different positions on the dispensary staff. It may not have been contemplated in the subject under consideration to-night, but I can not help touching on this question, as the abuse of these different dispensaries and clinics is only too well known among medical men.

I daresay, without exaggeration, that in many of the dispensaries in this city, hundreds, yes, thousands of patients annually, are treated free, who can well afford to pay something. I have had well-to-do patients come to my service at the Illinois Charitable Eye and Ear Infirmary, who were driven there in a brougham by a liveried driver. An institution like that and the medical men connected with it are continually imposed upon, notwithstanding there is an attempt to safeguard us by having a notary at the door who is supposed to require of each patient an affidavit that he is indigent or unable to pay.

We medical men connected with these dispensaries are responsible for this state of affairs to a great extent, and we are the means of helping some of these people to pauperize themselves. We ought to devise some means by which we could know what we are doing and separate the worthy from the unworthy. We are not doing this at present.

In the New York Eye and Ear Infirmary there is an officer from some charitable bureau in attendance every day who takes notice of every patient who comes in. If there is any suspicion that any individual is an impostor he is carefully looked up by the bureau. So far as I know, nothing of that kind is done here, although it should be, and we ought to co-operate with the different charity boards to secure some such system. It seems to me that the relation of the subject to that of industrial insurance is a close one. It is true that a certain evil confronts us in contract practice, yet we are doing even worse than that in many of our dispensaries and clinics. While contract practice is to a certain extent pernicious so far as our professional welfare is concerned, yet we are engaged in something as degrading and demoralizing to the community at large.

I bring up this question of the dispensary evil because it seems to bear a close relation to the subject of the evening.

Professor Henderson (closing the discussion):—Three points have been raised in the discussion, one by Dr. Henrotin, in regard to the variations and the grading of premiums for service. Under the German system, as Dr. Klebs has reminded me, this is provided for. The principle which Dr. Henrotin has stated is a thoroughly sound one, and should be regarded.

With reference to the question suggested by Dr. Wilder, there are three elements to analyze. One is the criminal element. Some of the people he describes ought to be passed over for perjury to the criminal arm of the law. Second, there is a charity aspect to it; and I hope the medical profession will co-operate with the Bureau of Charities and have a certain per cent. of these cases investigated, so that those who can afford to pay will do so. In the third place, we have the insurance element, which will be provided for partly under the system of accident insurance, and partly by sickness insurance. The working men will pay their contributions into the fund, and, out of this, the doctors will get their share.

Dr. Harris' suggestions go right down into the roots of the system he referred to, and I trust that that phase of the subject will be dealt with in a vigorous way. In my previous remarks, I said that sickness and invalidity insurance, old-age pensions, are matters which will take greater time to settle. The law should be modified as soon as possible to meet the deplorable conditions which Dr. Harris has described with the accuracy of an expert; and some form of the compensation law would meet the difficulties he mentions.

CLARK COUNTY.

The Clark County Medical Society met in Dr. Bradley's office at 2 p. m. Members present, Bradley, Duncan, Burnside, Rowland, P. P. Haslit, Ryerson, Pearce and L. J. Weir. A fee bill was unanimously adopted, which is thought to be practical for every day work for every doctor in the county. A committee was appointed, consisting of Drs. Burnside, P. P. Haslit and John Weir, to present a copy to every legally qualified physician in the county and ask and insist that he sign it. The committee was instructed to have the fee bill and names printed in proper form to hang up in our offices.

Dr. Duncan reported in an interesting manner the American Medical Association meeting at Boston. About 6,000 physicians were there. He considered the expenses of the trip well repaid by what he heard and saw, but that the papers read in the Clark County Medical Society were about as good as papers heard there. The courtesy extended was a surprise to him. Everyone was courteous.

L. J. Weir reported the state society meeting, dwelling first upon the purposes of medical organization, scientific advancement, business interests and the benefit to the public by the societies advancing and disseminating proper information on medical subjects, then stated the general plan of organization in the United States and, in detail, the work of the Illinois State Medical Society. Adjourned.

L. J. WEIR, *Secretary*.

DE KALB COUNTY.

The DeKalb Medical Society met May 4, 1906, at DeKalb in the Elks' Club rooms. The secretary's report showed that he had collected prior to the meeting, \$64.00 and had expended \$36.13, having a balance of \$27.87 in treasury. He collected \$60.00 at the meeting, making a total of \$88.87 in his hands. Eight members on the roll were out of the county, of these J. B. Ludwig of Lemont withdrew to join the Cook County Society. Dr. Delevayne of Belvidere wished to retain his social membership in the society but had paid his state dues in Boone county.

Of the resident physicians of the county as reported to the Councilor of the District the following were reports for correction: Thos. Owings, removed from Maple Park to Hinkley; E. P. Brewer, of Shabbona, has removed; M. C. Mann, of Lee, has retired; Chas. Winnie, of Sandwich, retired; V. Vermilye, of Sandwich, retired; Dr. Mortenson, of De Kalb, removed. There were eighteen officers and members present. The following were elected to membership: J. L. Church, of De Kalb; J. D. Trubauer, of De Kalb; A. C. Kestler, of Courtland. They signed the constitution.

Officers for the ensuing year were elected as follows: Dr. Rodgley, of Malta, President; Dr. Hill, of Genoa, Vice-President; Dr. Mordoff, of Genoa, Secretary; Dr. Brown, of Sycamore, delegate to state meeting; Dr. George Nesbitt, of Sycamore, alternate to state meeting; Drs. Austin, of Genoa, Delevayne, of Belvidere, John B. Nesbitt, of Sycamore, were elected censors.

Dr. Brown spoke of the necessity of the profession belonging to county societies. Dr. Murphy asked that the delegate be instructed in relation to medical defense.

Dr. Trumbauer moved that this society send a vote of appreciation for the stand taken relative to frauds and quackery in medical advertisements by *Colliers*, *Ladies' Home Journal*, *McClure's*, *Everybody's* and the *Chicago Tribune*. Seconded by Dr. Anderson and carried.

Dr. Murphy moved that the secretary report the proceedings of the meeting to the ILLINOIS MEDICAL JOURNAL for publication. Seconded and carried.

It was moved, seconded and carried that the chair appoint a committee of three, whose duty should be to secure the writing of papers for the next meeting. The chair appointed Drs. Murphy, Austin and Riley. On motion of Dr. Barton the meeting adjourned.

C. H. MORDOFF, *Secretary*.

FULTON COUNTY.

The thirty-fourth meeting of the Fulton County Medical Society met in the parlors of the Churchill House in Canton, July 3, and was called to order by Vice-President Chapin at 1:30 p. m. The minutes of the thirty-third meeting were read and approved.

The following members were present: Drs. Scholes, Sutton, Shallenberger, Coleman, Oren, Harrison, Regan, Chapin and Ray.

Ex-President Scholes was called to the chair while the acting president presented a paper on "The Non-operative Treatment of Appendicitis." Dr. Oren presented a report on the state meeting at Springfield, May 15, 16 and 17, which was ordered filed with the secretary.

The program committee reported the following, which was adopted subject to the approval of the president. Program for the October meeting: Paper by Dr. W. E. Shallenberger; Diarrhea of Children, Dr. F. M. Harrison; Eye Strain, Its Relation to the General Practitioner, Dr. E. W. Regan.

Notice was given by Dr. Coleman that the following amendment to the by-laws would be presented at the October meeting for adoption: *Resolved:* That Article IV be changed to read: The initiation fee shall be \$2.50 which shall cover the first year's dues.

The annual dues shall be \$2.50, which shall include membership dues in the Illinois State Medical Society and one year's subscription to the Illinois Medical Journal.

The secretary was instructed to canvass the county and secure as many members to the state society as possible.

D. S. RAY, *Secretary*.

GALLATIN COUNTY.

The Gallatin County Medical Society met in regular session in Masonic Hall, Shawneetown, June 13, 1906, at 2 p. m. All officers and a fair attendance of members present. The visitors were Drs. J. L. Wiggins, president of the Southern Illinois Medical Association and C. W. Lillie, chairman of the Medical Section of the State Society, both of East St. Louis. Dr. W. H. Riley read a very interesting paper on "Summer Diarrhea in Children." It was well written and was quite appropriate at this time of the year. There was much interest manifested in the discussion of the paper. Dr. J. L. Wiggins read a paper, entitled "A Study of Abdominal Pain Relative to Diagnosis and Treatment." The doctor gave, as well as time would permit, the differential diagnosis of the numerous pathological conditions of the abdomen by means of pain. The paper was scientific and practical and was much appreciated by our society.

Dr. Lillie read a paper on "Duties and Obligations Relating to Tuberculosis." He advocated the instruction of the laity by means of lectures by the profession and the general distribution of literature on the methods of preventing the spread of this disease. The paper contained much valuable information regarding our duties as medical men to our patients and the public at large and was highly commended by all who heard it. We hope to have these able brethren of the profession with us often.

The following resolutions were adopted by the society and ordered sent to the ILLINOIS MEDICAL JOURNAL for publication:

WHEREAS, The medical profession is largely responsible for the growth and financial welfare of the life insurance companies, both fraternal and old line, doing

business in this and other counties and some of the old line companies have reduced the fees for examination and others are likely to follow; therefore, be it

Resolved, By the Gallatin County Medical Society, that the said reduction is an injustice to the examining physician in requiring him to do service, the pay for which is inadequate to the service rendered; and be it further

Resolved, That the Gallatin County Medical Society condemns the action of said companies and urges the necessity of maintaining the fees formerly paid by these companies; and, be it further

Resolved, That each member of this society pledge himself not to make an examination for any life insurance company at the proposed reduced rate; and, be it further

Resolved, That each and every member of the Gallatin County Medical Society should charge a fee of not less than three dollars (\$3.00) for each examination made for any fraternal life insurance company requiring urinary analysis and two dollars (\$2.00) when analysis is not required and not less than five dollars (\$5.00) for each and every examination made where urinary analysis is required for any other life insurance company.

J. W. BOWLING, *Secretary*.

GRUNDY COUNTY.

The Grundy County Medical Association was entertained at an elaborate banquet, prepared by the wives of the Morris physicians, at the G. A. R. hall Friday night, May 11. After the supper officers for the coming year were elected as follows: President, Dr. Walsh; vice-president, Dr. Brinkerhoff, Minooka; secretary and treasurer, Dr. H. M. Ferguson.

Following this Dr. Walls, of Chicago, gave an address on Infant Feeding. This was supplemented by statistics furnished by Dr. Baum, of Chicago, in which he showed that the death rate among children was directly traceable to impure cow's milk.

Thirty-four physicians were present and enjoyed the excellent supper by the ladies, Mrs. Backus, of Joliet, arranging the menu and service. The Misses Mamie Nelson, Ella Nelson, Abbie Wilson and Louise Palmer assisted at the tables.

The decorations were pinks and apple blossoms and gave a pleasing aspect to the surroundings.

The entire affair passed off pleasantly and speaks well for the hospitality and entertaining qualities of the Grundy County Medical Association.

H. M. FERGUSON, *Secretary*.

HANCOCK COUNTY.

The Hancock County Medical Society held its last general meeting at Elvaston, July 2, 1906. The meeting was called to order by S. M. Parr, the president, in the Methodist Church at 1 o'clock. The minutes of the last meeting were read, showing the following officers elected at the last meeting, April 2, 1906:

President, S. M. Parr, Fountain Green; vice-president, R. B. Roberts, Augusta; treasurer, C. L. Lewis, Carthage; secretary, W. M. Blender, Carthage; delegate and censor, C. A. Runyon, Elvaston.

The following program was rendered: Address, by O. B. Will, of Peoria. Dr. Will spoke of the last meeting of the state society, also of the work of councilors, and of the benefit of more thorough organization in regard to protection in malpractice suits. He urged every member in good standing to be very prompt in paying dues.

A paper on Six Weeks' Experience in Peritoneal Infections, reporting four cases with complete recovery, was read by Dr. C. E. Ruth, Keokuk, Ia. It was discussed by Drs. Rankin and Runyon.

A paper on Common Naso-Pharyngeal Obstruction and Some of Their Most Important Sequelæ was discussed by Drs. Sisson and Lopsley.

A report of a clinical case, by Dr. W. M. Rankin, Bosco, was discussed by Dr. Fuller.

Dr. Florence A. Howard was elected to membership. The applications of Drs. Faith, Humphrey, Sherwood, Miller, Casburn were referred to the Board of Censors. The society tendered a vote of thanks to Dr. and Mrs. C. A. Rojnon, who entertained the society at dinner at their home. The society tendered a vote of thanks to the visiting members.

Members present were Drs. Callahon, Pow, Rankin, Runyon, Frayier, Taylor, Githens, Cooper, Bleuler; visitors, Drs. O. B. Will, C. E. Ruth, E. O. Sisson, R. M. Lopsley, L. M. Fuller, Blond, E. M. Hansen, Saline. The next meeting place is Augusta, on October 2, 1906.

W. M. BLENDER, *Secretary*.

PEORIA COUNTY.

PEORIA CITY MEDICAL SOCIETY.

The last meeting of the Peoria City Medical Society was held in the rooms in the Observatory Building, Tuesday evening, June 18, 1906. The evening was to have been devoted to reports from the American Medical Association at Boston and the meeting of the Illinois State Medical Society at Springfield, but owing to the death of Dr. Emerson M. Sutton, one of our most prominent members, the society adjourned, after appropriate action regarding his death had been taken and arrangements made for attending the funeral in a body.

Dr. Sutton had for a long series of years been one of the most prominent members of this society and has frequently appeared before them in the discussion of subjects of great interest to the profession generally. He came to Peoria from Canton, where his father is, at the present time, a well known physician. For several years after receiving his diploma, he practiced with his father, coming to Peoria in 1892, where he soon built up a large surgical practice.

At this meeting a committee of three, consisting of Drs. C. H. Brobst, M. S. Marcy and L. A. McFadden, were appointed to draw up resolutions on his death. The following were adopted by the Peoria City Medical Society and ordered spread on the books.

"Again we are reminded of the uncertainty of life in being called to mourn the sudden death of our beloved brother and co-worker, Dr. Emerson M. Sutton.

"Words are inadequate to express the deep sorrow felt, not only by his brother physicians, but by every citizen of Peoria.

"No man in our city stood higher in his profession, no one was more respected by all classes, nor had a warmer heart for his fellow man than Dr. Sutton.

"Realizing as we do, that while death was the result of his own fearless hand, our sympathies are the greater, since his reason was overthrown for the moment, caused by the excessive amount of work done during the past few years in his attempt to relieve suffering humanity. Therefore, be it

"*Resolved*, by the Peoria City Medical Society, That we extend to his loving wife, little children, father and brother, all of whom he loved most tenderly, our heart-broken sympathies, and commend them to Him who cares for the sorrowing and bereaved as no mortal can.

"*Resolved*, That we hold his memory sacred, and ever honor and respect the name of the man who died at his post of duty, working beyond his powers of endurance for suffering mankind.

"*Resolved*, That we firmly believe him to be a martyr to his chosen profession, and that he has gone to receive a martyr's reward.

That tears of sorrow fall like the dew of night

That glistens in the morning sun.

His soul has now found rest in God's purest light;

His work on earth is done.

"Committee." { "C. H. BROBST, M.D.
"M. S. MARCY, M. D.
"L. A. MCFADDEN, M.D.

FREDRICK E. SIDLEY, *Secretary*.

RANDOLPH COUNTY.

The quarterly meeting of the Randolph County Medical Society met at Evansville, July 10, at 10:45 a. m., at Dr. F. J. Meyer's office. The chairman, Dr. C. G. Smith, called the meeting to order. The following members were present: Drs. H. C. Adderly, C. G. Smith, A. D. Steele. Minutes of the last meeting were read and approved. The regular rules were dispensed with, a board of censors was appointed and Dr. F. J. Meyer, an applicant for membership, was duly elected.

Dr. F. J. Meyer had an interesting case, the patient being present. A married lady, 26 years old, mother of two children, the youngest being a child four months old. Two months after her confinement, she felt a pain in the right side in region of her liver. On standing the pain was below, about the right ovary. By palpating one could feel a hard mass, the size could not be definitely determined, as examination therefor caused her much pain on pressure and she became nauseated. The bowels were constipated. The diagnosis of adhesions involving the right ovary due to the inflammatory process that had existed so long. She was advised to have an early laparotomy performed.

Dr. H. C. Adderly presented a very interesting paper, reporting a patient who had appendicitis, and was operated on. The appendix vermiformis was about ten times its normal size. Adhesions had formed all around. On opening the appendix, it contained seven hard substances, ranging in size from a pea to a hickory nut. Operation was successful, patient was out in three weeks.

Dr. C. G. Smith reported a case to which he had been called, in consultation with Dr. Brandts. The patient was 30 years old, the mother of three children. She was eight months pregnant. The first symptom the patient had was severe pain in her head, which became intense; vision and mind became clouded, and complete coma set in. The comatose condition subsided after thirty-six hours, sight not improved, no urinalysis report. A diagnosis of uremic poisoning was made.

Dr. H. C. Adderly was selected by the chairman to represent the society on legal defense. Dr. F. J. Meyer made a motion that the Randolph County Medical Society be affiliated with the State Medical Society and that no member of this society make an examination for any of the old line insurance companies for less than \$5. Motion was adopted. Next quarterly meeting will be held in Chester.

DR. C. G. SMITH, *Chairman.*
DR. A. D. STEELE, *Secretary.*

ROCK ISLAND COUNTY.

The regular bi-monthly meeting of the Rock Island County Medical Society was held Tuesday, June 12, 1906, at the Manufacturer's Hotel, Moline. Preceding the meeting, a supper was served in the dining room.

At 8:30 the meeting was called to order by the president, Dr. F. H. Gardner. The minutes of the last meeting were read and approved. The program for the evening consisted in a paper entitled, Pernicious Vomiting in Pregnancy, by Dr. E. M. Minnick, of Moline. The Doctor's paper was well prepared and proved very interesting and included autopsy findings and reports of several interesting cases. The discussion was participated in by nearly all the members present.

The applications of Drs. C. A. Paterson, M. J. O'Hern, M. S. Dondonville, and A. H. Foster, which were presented at the last meeting, were again presented and a ballot taken on each separately, and all were elected to membership. The application of C. C. Sloan was read and placed on file.

Resolutions adopted by the Pike County Medical Society, deprecating the proposed reduction in price for insurance examinations in Old Line Companies and urging the profession of this state to hold to the standard prices, were read by the secretary. It was moved and seconded that we concur in the resolutions. The motion was carried.

It was moved and seconded that the resolutions be embodied in the minutes and officially reported. Carried.

A letter from the American Medical Association, asking for help for San Francisco physicians, who lost all their property in the recent earthquake, was read by the secretary. After considerable discussion, the Society decided to send to the American Medical Association a draft for \$25.00 for the California Benefit Fund. The meeting then adjourned.

RALPH DART, *Secretary*.

SANGAMON COUNTY.

The Sangamon County Medical Society met in the Lincoln Library, June 11. The meeting was called to order by Dr. Langdon, in the absence of the president. Minutes of the previous meeting were read and approved. The applications of Dr. Priest, of Williamsville, and Dr. Blankmeyer, of Springfield, were read and referred to the board of censors.

Dr. Kreider brought to the attention of the society the facts regarding the long and efficient service of a member of the State Medical Society and suggested that some fitting acknowledgement of his services be made by the profession of the state. He suggested that a banquet in his honor would be appropriate and that to make it the occasion of the annual meeting of this society would be opportune. A motion embodying the suggestions prevailed and the chair appointed the following committee to take charge of the matter: Drs. Kreider, A. L. Brittin and Patton.

As announced on the program, each member was invited to report an interesting case. Dr. Colby reported a case of mitral and aortic insufficiency, with roughening of the aortic valves. The interesting feature of the case was the disparity between the general symptoms and the physical findings of the heart. The patient has so far recovered as to be about and has been discharged from the hospital. Dr. Griffith reported a case of hourglass contraction of the uterus in a case of labor, retaining the placenta. Dr. Patton reported a case of traumatic edema, probably neurotic in character. Dr. Dixon related his experience, recently, as consultant in a case of abortion. He denounced the use of the curette and lamented the indiscretion of the consulting physician in the case.

Dr. A. L. Brittin reported a case of forceps delivery in a country home under unfavorable conditions, where uneventful recovery followed and surprisingly good union of the repaired perineum was obtained. Dr. Monroe reported an unusual case of vomiting of pregnancy, which had persisted in spite of all the usual methods for relieving that condition; but on evacuating the uterus the patient was able to retain food within twenty-four hours. The doctor stated that in such cases the mortality was more than 50 per cent. Dr. Patton observed that such cases naturally fell into two classes: those of neurotic character and those depending on a physical cause. In the former class the vomiting naturally ceases after the uterus has been evacuated, while in the second the cause is extrauterine and often continues to operate, causing death by toxemia or exhaustion.

Dr. Metz reported an interesting case which clinically appeared to be one of gallstones; but on operation the gall bladder contained neither calculi nor bile. The liver was enlarged and bled very easily. The wound was closed and the patient treated symptomatically, making a good recovery. The inference drawn by Dr. Metz was that the patient was suffering from hepatitis. Dr. Langdon concurred in this opinion and said that it was a common condition in the south, especially in malarious districts.

Owing to the lateness of the hour it was not possible for all present to present cases. It was generally conceded that the innovation of reporting cases, instead of having a set paper, was decidedly successful. The meeting closed in order.

R. D. BERRY, *President*.

C. R. SPICER, *Secretary-Treasurer*.

ST. CLAIR COUNTY.

The St. Clair County Medical Society met in regular session at the St. Clair Country Club, July 5, 1906, with the following officers and members present: Hugo Wangelin, president; J. W. Rendleman, vice-president; J. W. Twitchell, corresponding secretary; C. W. Lillie, recording secretary; A. E. Hansing, treasurer; A. B. Gunn, W. E. Wiatt, J. G. Massie, censors; and members, E. L. Wagoner, J. Sloey, F. W. Kerehner, Geo. Hilgard, J. A. Grimes, Jacob Butler, R. L. Campbell, Carroll Smith, Walter Wilhelmj, H. C. Fairbrother, E. M. Irwin, H. G. Hertel, C. H. Starkel, J. W. Rendleman, J. L. Wiggins, W. C. Spannagel, G. C. Adams, W. S. Wiatt, R. A. Twitchell, C. A. W. Zimmerman, E. H. Lane. Guests of the society were Drs. J. A. Egan, Springfield, secretary of the State Board of Health; F. L. Evans, M. M. Glass, J. I. Higgs, A. B. McQuillan, J. C. Caldwell, C. S. Skaggs, East St. Louis; L. T. Miller, Caseyville; F. C. Kiesling, Lebanon; F. M. Trigg, and C. L. Moeller, East St. Louis. The minutes of the April meeting were read and approved.

Dr. J. A. Egan reported a case showing the difficulty of making a diagnosis in certain cases of yellow fever; and emphasizing the importance of extreme care in time of epidemics. The case was one occurring on a train in Kentucky. A young man had come from some place in the south during the recent epidemic, and was taken sick some distance south of the Illinois state line, and, as this state was then quarantined against the south, Dr. Egan was on the lookout for suspected cases. He saw the sick man, but could not decide positively as to the nature of the disease, there being an absence of nearly all of the so-called "classical" signs. At Cairo, a member of the quarantine staff was called in, and still a diagnosis of yellow fever could not be established, and the young man was allowed to proceed to his destination; although the ear in which he had traveled was vacated and fumigated. The man died of yellow fever three days later in Chicago.

Dr. Egan gave a very interesting and instructive talk on The Medical Practice Act and Its Enforcement. According to Dr. Egan, our medical law is about the best in the country. It is his belief, however, that the board of health should be separated from the examining and licensing board; or that there should be two boards, instead of one. The question of advertising by doctors was discussed by the doctor, and he showed very clearly that the law does not prohibit this, and that it does not, nor ever will constitute a sufficient ground for the revocation of license.

In discussion, Dr. Fairbrother said that we are under obligations to the state board for many things, but especially to Dr. Egan for his untiring efforts in behalf of a higher medical education; for maintaining the dignity of the medical profession; for eliminating many of the disgraces attaching to it thirty-five years ago, when Dr. Miller and himself first began practice. This dignified medical society meeting to-day is the result of the work of the state board of health.

Dr. Lillie moved that a vote of thanks be tendered Dr. Egan for his attendance and interesting discussion. A rising vote showed the high appreciation of the society. The vote was unanimous.

A committee presented the following resolution, which was adopted:

WHEREAS, in the death of Dr. George Loelkes, the St. Clair County Medical Society has suffered the loss of a faithful member.

Resolved, That we, as members of the St. Clair County Medical Society, desire to put on record our appreciation of his character and attainments. Dr. George Loelkes, though one of our recent members, showed by his attendance and activity in what esteem he held the society; and that he was ever alert to advance the cause of the profession. By his integrity, fearless courage, and honesty of purpose, he set an example for the members to emulate.

Resolved, That we tender our sympathy to the family of the late Dr. George Loelkes, and that a copy of these resolutions be entered on the records of the society. E. P. Raab, J. W. Twitchell, G. E. Hilgard, committee.

Dr. J. W. Twitchell presented the following resolution, which was adopted:

Resolved, That the St. Clair County Medical Society deprecate the reduction of fees for examinations for insurance companies; and recommends that the standard

fee for the ordinary examination be five dollars, and that ten dollars be the fee for examinations requiring the use of the microscope.

The president appointed Dr. F. E. Auten, of Bellevue, as a member of the committee on Medical Defense of the State Society. The treasurer reported \$110.02 in the treasury. The Board of Censors reported favorably on the applications of Drs. C. S. Skaggs, F. L. Evans, M. M. Glass, Otto W. Knewitz, H. M. Voris, John I. Higgs, A. B. McQuillan, J. L. Linder, and J. C. Caldwell, of East St. Louis; F. C. Kiesling, Lebanon; L. T. Miller, Caseyville. On motion, the report of the Board of Censors was accepted and the candidates elected by acclamation.

The society adjourned, and the members joined the ladies in the auditorium, where they were entertained with a musical program, arranged by Dr. Hansing. This consisted of a piano solo, by Mrs. J. W. Paton; song, by Mrs. J. L. Wiggins; song, by Mrs. Byron Virgin; recitation, by Mrs. W. S. Wiatt; concluding with a violin solo, by Dr. Hansing, with piano accompaniment by Mrs. Paton. Every number on this program was well rendered and elicited the highest praise. Dr. Lillie thanked the ladies for their assistance, and expressed a hope that they might again participate in entertaining the members and friends of the society. Supper was then served under the trees in the park; and thus ended a day of pleasure and profit to all participants. C. W. LILLIE, *Recording Secretary*.

BRainerd DISTRICT.

The Brainerd District Medical Society held its thirtieth annual meeting in the Logan County Courthouse, Lincoln, Ill., April 13, 1906. The secretary's annual report shows that fifteen members have been added to the society during the year, making a total of ninety-five members in good standing. The treasurer's annual report shows a balance in the treasury of \$116.23. The following officers were elected for the ensuing year:

President, W. E. Guthrie, Bloomington; first vice-president, C. C. Montgomery, Lincoln; second vice-president, S. E. Munson, Springfield; third vice-president, A. G. Servoss, Havana; secretary, H. S. Oyler, Lincoln; treasurer, C. C. Reed, Lincoln. The board of censors are as follows: H. M. Van Hook, Mt. Pulaski (1907); W. A. Mudd, Athens (1908); C. M. Noble, Bloomington (1909).

The retiring president, Dr. P. H. Oyler, of Mt. Pulaski, delivered the following address:

The young doctor of to-day can not realize, as we older ones do, the wonderful progress that has been made in the past thirty-two years in all that pertains to our profession. Then no license was required and diplomas were a necessary requisite only a few years prior. Many of our older physicians were graduates, and it was through their influence that the laws regulating the practice of medicine were enacted. The physician who kept pace with and entered into the progress of medicine and surgery grew ripe in knowledge, and in turn taught the younger lads their first lessons, who, if thoughtful, continued where their tutors left off, and by degrees brought the profession up to a higher plane than they found it. It was a glorious thought that after you had labored long and hard you were to be honored and called into counsel by younger medical men.

Our armamentarium was, in the early days of my practice, much less elaborate and helpful than now. To-day you can carry your hypodermic syringe and accurately-dosed tablets ready for instantaneous use. Thirty-two years ago the former had not been invented and the latter were home-made and inaccurate. I had practiced twelve years before I became acquainted with the gelatin capsule, and scarcely a greater benefaction to ailing mortals has been invented than the simple gelatin capsule. Whenever I fill one, visions of rhubarb, jalap, calomel and quinin mixed in molasses, preserves or slippery elm, disgust me and take away all longing to be a boy again.

If the tools with which we do our work have undergone so complete a change, how much more noticeable has been the progress in an educational way! The

young graduate of to-day, even many of those who fail to pass the state board examination, can console themselves with the reflection that they know more than the professors who taught the older physicians. But let us not forget that the active old physician of to-day, who lived, moved and kept pace with all this progress, is a well-qualified practitioner and has the years of rich experience to aid him in selecting the wheat from the chaff.

It was a common occurrence in those days to meet with doctors who had taken only one course of lectures. I knew one who rather boasted that he had heard not more than half a dozen lectures and did not begin to practice medicine until seven or eight years later, when he had lost all his property, yet he had the confidence of those who received his services. Such men, however, were not the fathers of medical associations, for they have always stood for better and more thorough education and have honestly wrought hard to safeguard the lives and health of our people by placing restrictions upon the practice of medicine. So little being required to become a doctor at that time, and so many desiring to shirk honest manual labor and find an easier avenue of entrance into professional life (if such you may call it), with its supposed emoluments, a quicker and easier education was in demand, and, responding to this, medical colleges with shorter and cheaper curricula rapidly developed. Charlatans and quacks had themselves incorporated as medical colleges and actually sold diplomas. The fathers of our association, nearly all of whom have passed to their reward, began a vigorous protest against this sin against humanity and intelligence. While a great work has been done in enacting state laws, much is yet to be done before we occupy our proper place.

If I am not mistaken, Illinois was among the first to take steps to raise the medical standard. Other states were having experiences similar to ours, and, like ours, their medical associations were protesting for a higher and better education. To conform to these new laws, colleges began to increase the requirements for matriculation, lengthen the terms and increase the number of years of study required for graduation, so that now nearly all colleges require a high school preliminary education and four years' course in medicine. I think we can justly claim that the organization of medical men has been instrumental in bringing about this higher standard of medicine. The education of the laity, however, in medical matters relating to the state, state medicine, as it is called, has not advanced with the higher attainments of the medical men. They are still easily humbugged in their selection of a physician and are more apt to employ a boasting quack doctor than a studious, conscientious physician. In our code of ethics we pledge ourselves, as good citizens, to be vigilant for the welfare of the community, to bear our part in sustaining its institutions and burdens, to be ever ready to give counsel in matters pertaining to our profession, to enlighten the people as to the protection of health and prevention of epidemics. When pestilence prevails it is our duty to face the danger even at the peril of our own lives. As evidence of the faithful performance of these obligations, we have given the people a more intelligent profession, we have lowered the mortality of all diseases not necessarily fatal, we have been instrumental in establishing hospitals for the indigent sick, hospitals for the treatment and care of the insane, quarantine and sanitary laws, compulsory vaccination when threatened with a smallpox epidemic; we have placed restrictions on the sale of poisons and narcotic drugs, and have secured the passage of many other laws all looking to the protection of the health of the public.

In conclusion, let us blot out of our history all the discord that has arisen among true physicians over matters of policy in administering the affairs of our association. Let us forget everything in the past, except the good we have done humanity, and not only throw our doors wide open to all honorable physicians, but go out in the highways and byways and entreat them to come with us and take heart for renewed effort in this era of progressive medicine, which is beneficent to our commonwealth, of material gain to ourselves and to the medical fraternity.

NEWS OF THE STATE

Dr. Young, of Breckenridge, has located at Hamilton.

Dr. Otto J. Stein, Chicago, has returned from Germany.

Dr. Charles S. Elder, Chenoa, fell June 28 and fractured a rib.

Dr. Charles C. Gordon, Highland, is seriously ill with typhoid.

Dr. and Mrs. Bernard Fantus are spending the summer in Europe.

Dr. and Mrs. G. W. Fiegen, of Nauvoo, are victims of an automobile accident.

Dr. Robert Emery, of Peoria, accused of manslaughter, was acquitted, June 8.

Dr. Vachel T. Lindsay and family, Springfield, sailed for Europe, June 23.

Dr. John Guerin, Chicago, has been appointed a member of the Board of Education.

Dr. C. W. Lillie has been elected chief of staff of the Henrietta Hospital, East St. Louis.

Dr. R. F. Liseher has succeeded to the practice of Dr. J. O. DeCourey at Mascoutah.

Dr. and Mrs. Edward C. Streeter are now in Japan and will return to Chicago late in August.

Dr. William M. Blender, of Carthage, has recently established a private hospital in that place.

Dr. Antonio Lagorio, Chicago, has been made a member of the Chicago Public Library Board.

Dr. and Mrs. Fenton B. Turek and Dr. Hugh T. Patrick, Chicago, have returned from Europe.

Dr. Julia D. Merrill, Chicago, was rescued after being lost for twenty-four hours in the Adirondacks.

Dr. W. M. Avery, Compton, has been appointed physician for the Paw Paw District of Lee County.

Prof. Alexis Carroll and C. C. Guthrie, of the medical department of Chicago University, have resigned.

Dr. Don Deal, a recent graduate of the Northwestern University Medical School, will locate in Springfield.

Dr. John MacKellar, formerly of Chicago, was seriously injured in an automobile accident at Manhattan, Nevada.

Dr. Lester B. Cavins, Mattoon, has been appointed demonstrator of clinical medicine in Baltimore Medical College.

Dr. G. T. Nelson, Morris, injured the muscles and tendons of the left leg, in a fall which he suffered June 12.

Dr. James H. Stowell, Chicago, has recently been made dean of the Dearborn Medical College.

Dr. Eugene Colin, St. Jacob, has been appointed assistant physician at the Illinois Eastern Hospital for the Insane.

Dr. Alfred Nash, Joliet, celebrated the fiftieth anniversary of his entrance into the practice of medicine, June 20.

Dr. R. L. Casburn, who sold his residence and practice to Dr. W. M. Blender, will locate in Rossville, N. M., September 1.

In an ordinance recently passed in Monmouth, the promiscuous scattering of samples of proprietary medicines is forbidden.

Dr. J. C. Harmon, Rantoul, who has been ill for several weeks, was taken to the Julia F. Burnham Hospital, Champaign, June 23.

Dr. Casey Wood was granted the ad eundem degrees of M.D. and C.M. by McGill University, Canada, for "services to medical science."

Dr. Leslie Casburn has located at Bentley, having bought the practice of Dr. G. E. French. Dr. French has removed to San Francisco, Cal.

Dr. C. F. Grimmer, who has been located in Topeka for four years, will sail September 1 for Europe for a year's special study in Vienna and Berlin.

Drs. Harold N. Moyer and Frank Allport were given the degree of LL.D. at the annual commencement of Notre Dame (Ind.) University, June 14.

Dr. Emil Lofgren, health officer of Rockford, has investigated the cases of alleged small-pox at Rockton, and states that the disease is not smallpox.

Dr. Thomas J. Robeson, of Chicago, has been commissioned lieutenant colonel and assistant surgeon general I. N. G., and assigned to the third brigade.

Dr. James L. Greene, the new superintendent of the Illinois Eastern Hospital for the Insane, arrived at Kankakee, July 21, and assumed charge July 23.

Drs. H. John Stewart and Wellington T. Stewart, Chicago, wish to announce that they have severed all connection with the Finsen Light Institute of America.

Friends of Dr. Ira Frank, 4714 Grand Boulevard, Chicago, will be glad to learn that he is slowly recovering from the injuries he received in an automobile accident.

Dr. Svenning Dahl has gone to Europe, and during his absence Dr. Karl Doepfner will occupy his position as chief surgeon to the Norwegian Deaconess Home and Hospital.

Dr. John W. Hairgrove was elected president and Dr. Emma Grace Dewey, secretary of the Medical Fraternity of Jacksonville, at a meeting of the society held recently.

The commencement exercises of Northwestern University were held June 21, more than 500 degrees being conferred. Ten of the medical graduates were awarded special honors.

Dr. J. C. Westervelt, inspector of the State Board of Health, has been sent to investigate a number of cases of alleged smallpox reported from Hurricane Township, Fayette County.

Dr. Daniel A. K. Steele, president of the College of Physicians and Surgeons, was given the degree of LL.D. at the commencement exercises of the University of Illinois, Champaign, June 13.

Dr. Vaclav H. Podstata, recently superintendent of the Cook County Institutions at Dunning, has assumed his new duties as superintendent of the Illinois Northern Hospital for the Insane, at Elgin.

The Illinois Steel Company, which has maintained a hospital in its plant at South Chicago for a long time without complying with the laws regarding licensure of hospitals, has applied for and obtained a license.

At the annual meeting of the directors of the Chicago Clinical School, Dr. W. T. Eckley was elected president, Dr. George F. Hawley, vice-president, Dr. Arthur M. Corwin, secretary and Dr. John S. Nagel treasurer.

At the annual meeting of the Cottage Hospital Association, Peoria, June 26, resolutions were unanimously adopted regarding the untimely death of Dr. Emerson M. Sutton, a valued member of the hospital staff.

At the annual meeting of the Physicians' Club of Chicago, June 26, Dr. William T. Belfield was elected chairman and Drs. Charles H. Mix and Arthur M. Corwin were re-elected secretary and treasurer respectively.

Dr. Julius F. Wengiersky has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, and Dr. Francis J. Sullivan has been appointed assistant at the Illinois Central Hospital for the Insane, Jacksonville.

Dr. George J. Schaller, aged 47, 518 Fullerton Avenue, Chicago, attempted to kill himself in his library recently by cutting his throat and inhaling gas. Despondency is said to be the cause for his attempt on his life.

Dr. Nicholas B. Delamater, Chicago, aged 60 years, was knocked down by an automobile on the evening of June 27, but owing to the slow rate of speed at which the machine was moving, the doctor escaped with a few bruises.

The Carbondale Medical Society has elected the following officers: President, Dr. J. A. Kelly; vice-president, Dr. J. G. Harper; secretary, Dr. F. J. Wagner; librarian, Dr. U. G. Anderson; censors, Drs. Jackson, Walker and Day.

The Lincoln Park Sanitarium for sick babies, at the foot of Fullerton Avenue, supported by the Daily News Fresh Air Fund, opened for the season June 25. During the summer of 1905, the sanitarium cared for 15,179 babies and 46,615 children.

The Oak Park Hospital and Training School for Nurses, of the Sisters of Misericorde, has obtained a loan of \$100,000 for fifteen years, at 4½ per cent., from the parent organization in Montreal, secured by a mortgage on its property in Oak Park.

The corner stone of the new Oak Park Hospital, at Wisconsin Avenue and Madison Street, was laid July 5. The Rev. Hugh McShane delivered the principal address. The building is expected to be ready for occupancy by the first of next January.

At a meeting of the Bi-County (Iroquois-Ford) Medical Society, June 5, resolutions were unanimously adopted, setting forth the long and honorable career of the late Dr. Daniel L. Jewett, Watseka, first president of the society, and deploring his decease.

The Chicago Medical College has been formally merged with the Northwestern University in a quitclaim deed filed for record. The college has for some time been affiliated with the University and is known as the Northwestern University Medical School.

Five cases of diphtheria in one family are reported in Moline. The father of the children, W. J. Walton, trusted to divine healing and a liberal use of witch hazel to effect a cure. As a result of this neglect, it is feared that three of the children can not recover.

The Peoria Medical Society has filed information in the county court against "Phenomenal" Kraus, the medicine man, charging him with being an itinerant drug vendor and also practicing medicine without a license. It is understood that Kraus will fight the case.

Dr. and Mrs. Frank S. Whitman were given a farewell reception by the employes of the Northern Illinois Hospital for the Insane, Elgin, June 29, at which a cut glass punch bowl and frappé set and a gold watch, suitably inscribed, were presented to Dr. Whitman.

Dr. C. H. Cutter, of Aurora, has been appointed official physician for the employes of the Aurora postoffice. This is a new position created by the government for the purpose of examining all applicants for employment in the postoffice department, before they assume their duties.

The employes of the Cook County institutions, Dunning, presented Dr. V. H. Podstata, the retiring superintendent, with a diamond pin, presenting Mrs. Podstata with a cut glass vase filled with flowers. The presentation speeches were made by President Brundage of the County Board.

Preliminary arrangements have been made for the organization of a city physicians' club in Canton, the object being advancement along professional and social lines and a closer bond between the members of the profession in the city. Plans are also being made for the erection of a hospital.

The Julia F. Burnham Hospital, Champaign, is to be enlarged to nearly double its present capacity. Among the new features will be a two-story isolation ward and a larger operating room on the third floor, while the emergency ward will be located in the basement of the new addition.

A damage suit has been brought against Dr. George Edens, a prominent physician of Danville, following the death of Miss Bessie Harlan at St. Elizabeth's Hospital in that city. The case is causing a great deal of excitement owing to the prominence of the defendant and the peculiar features involved.

Mrs. Alice B. Sheldon, widow of Dr. Willard B. Sheldon, has brought a damage suit of \$10,000 against Clarence M. Wooley, president of the American Radiator Company. Dr. Sheldon died after being thrown from a buggy at Lake Geneva, the horse being frightened, it is alleged, by an automobile driven by Wooley.

The National Posters' Association is endeavoring to bring about reforms in the character of matter placed before the public eye. At a recent meeting of the Association held in Chicago it was decided to eliminate all suggestions from advertisements distributed by the Association, that would be in any way hurtful.

A license to practice medicine, which the owner, Dr. Leonard C. Koehler, declares was stolen from him in 1886, was the subject of a suit filed in the Circuit Court recently, by Dr. Koehler against the state board of health. Dr. Koehler asks that the board be enjoined from prosecuting him on the ground that he is practicing without a license.

The Bulletin of the Department of Health of Chicago, quotes from the editorial in the *Journal of the American Medical Association* on the subject of Fourth of July dangers, and speaks of the decrease of tetanus in the past two years. It urges that all Fourth of July wounds, no matter how caused, be kept open to the air until seen by a physician.

The physicians of Waukegan have organized the Waukegan Clinical Society, a branch of the Lake County Medical Society. It is intended that this shall be in line with the state and national organizations on all questions of importance. The officers elected are: President, J. M. G. Carter; vice-president, Dr. J. C. Foley; secretary and treasurer, Dr. C. E. Daniels.

The plans for the George Smith Memorial Addition to St. Luke's Hospital have been completed. The building will be six stories in height, with a frontage of 135 feet on Michigan Avenue. There will be 112 private rooms, a number of which will be arranged in suites, with private baths. The building is designed to afford accommodation for the superior grade of private patients.

Dr. O. C. Willhite, the new superintendent of the Cook County Institutions at Dunning, entered upon his new duties July 16th. Dr. Willhite is 34 years old and is a graduate of Rush Medical College. His last position before coming to Dunning was the superintendency of the Iowa State Hospital for Inebriates, before which he was connected with the Kankakee Insane Asylum for three years.

Charles T. Garrard, superintendent of the Illinois Charitable Eye and Ear Infirmary, emphatically denies the charges of cruelty, mistreatment and neglect of patients which have been brought against the management. It is asserted that these reports were circulated by persons who had refused to be governed by the rules of the infirmary. An investigation among the patients revealed only two minor complaints.

The prosecution and investigation of cocaine sellers in Chicago is being vigorously pushed. C. A. Montgomery, a druggist, accused of the illegal sale of cocaine and morphin, was fined \$100 and costs. J. H. Montgomery, another druggist, accused of a similar offense, was discharged on a technicality. A. Lane claimed that a clerk had sold the drug, and a warrant was issued for the arrest of the clerk. A. C. Bren-deke was fined \$50 and costs for the illegal sale of cocaine.

A physician for the Canton township poor has been employed at a salary of \$800 a year. No provision is made in the contract for the

care of patients suffering from smallpox or other contagious diseases. Formerly, the salary of the county physician was about \$1,000 per year and these cases were provided for. Dr. Fouser, the present county physician, recently declined to accept such a case, saying that the contract made no provision for the care of these patients.

The Chicago Union Hospital, through its president, has asked the Circuit Court to restrain the building commissioner and the chief of police from interfering with the erection of a new hospital building at Wellington Avenue and Dayton Street. Work on the structure had been ordered stopped by the commissioner of buildings, on the ground that the building was being erected in violation of a city ordinance which forbids a hospital within 400 feet of property used for public school purposes.

On account of the fight for control of the Jenner Medical College, Chicago, thirty-eight graduates who have completed the four years required course and hold their diplomas, have been refused licenses to practice medicine by the Illinois State Board until it is determined who has the right to issue diplomas. The graduates, many of whom obtained their medical education by working in the daytime and hearing lectures at night, are dismayed at the prospect of being delayed perhaps months before they can begin practicing.

Dr. Albert J. Ochsner, 110 Sedgwick Street and Dr. W. D. Goldsmith, 957 North Clark Street, Chicago, were sued for \$20,000 in the Superior Court recently by Carl A. Hartmann on the charge that he engaged Dr. Ochsner to perform an operation and that Dr. Goldsmith had been substituted. Mr. Hartmann claims that as a result of the operation, he received an injury which will remain with him through life. Dr. Ochsner denies being called by Hartmann and asserts that after the operation Dr. Goldsmith called him in consultation.

Dr. A. C. Girard, late Assistant Surgeon General, U. S. A., retired as Brigadier General, has located in Chicago, where he is very well known, having been for a number of years on duty at Fort Sheridan. Dr. Girard was chief surgeon of the Second Army Corps during the Spanish war and afterward built and organized the General Hospital at the Presidio of San Francisco. He subsequently went to the Philippines and on his return, after a year's service as Chief Surgeon of the Department of California, was retired from active service. He announces that he will limit his work to consultations in surgical cases.

MARRIAGES.

ERNEST E. DAVIS, M.D., to Miss Frances Ross, both of Avon, June 2.

WILLIAM H. DALEY, M.D., to Miss Rae M. O'Dowd, both of Chicago, June 12.

FRANK POTTS, M.D., Toluca, to Miss Mabelle Thompson, Lacon, June 14.

WILLIAM G. ROSS, M.D., Kempton, to Miss Carrie Hayes, of Joliet, June 16.

DWIGHT E. MORTON, M.D., to Miss Bertha C. Bugg, both of Taylorville, July 5.

ELBERT A. BING, M.D., Browns, to Miss Cora Estes Whitson of Johnsonville, June 27.

HALFORD J. MORLAN, M.D., to Miss Percy Eugene Bohrer, both of Ludlow, June 30.

C. A. W. ZIMMERMAN, M.D., to Miss Cecil Ray Mehan, both of East St. Louis, June 4, 1906.

D. F. MORTON, M.D., Taylorville, to Miss Plowman, of Missouri, formerly of Taylorville.

ALFRED HUGH FOWLER, M.D., Chicago, to Miss Josephine Smith Bates, of Fairbury, June 30.

DEATHS.

THOS. H. BATES, M.D., died in Cook County Hospital, Chicago, May 23, from nephritis, after an illness of five months, aged 68.

SAMUEL M. FRENCH, M.D., Hahnemann Medical College and Hospital, Chicago, 1882, died recently at his home in Chicago, aged 80.

SUISEPPE RONGA, M.D., died at the Presbyterian Hospital in Chicago, from cerebral hemorrhage, June 20, after a short illness, aged 62.

WILLIAM McAFEE, M.D., Hahnemann Medical College, Philadelphia, 1861, died from osteosarcoma at his home in Rockford, Ill., July 20.

WILLIAM WALLACE SKINNER, M.D., Rush Medical College, Chicago, 1891, of Peoria, died at the home of his daughter in that city, June 17, aged 71.

ERNEST T. LIND, M.D., Rush Medical College, Chicago, 1895, died at the home of his father in Chicago, July 22, from pneumonia, after an illness of two weeks, aged 34.

THEOPHILUS GAGNER, M.D., Missouri Medical College, St. Louis, 1880, a member of the American Medical Association, died at his home in Trenton, Ill., June 15, aged 54.

ALBERT F. PERRY, M.D., Meharry Medical College, Weldon University, Nashville, Tenn., 1890, died suddenly July 12, from pulmonary hemorrhage, in his office at Chicago, aged 45.

CHARLES C. GORDON, M.D., Hospital College of Medicine, Louisville, 1894, St. Louis College of Physicians and Surgeons, 1896, of Highland, Ill., died at the home of his father in Peoria, Ill., July 11.

EDWARD HOEHN, M.D., University of Zurich, Switzerland, 1853, for many years a practitioner of Columbus, Nebraska, died at the home of his daughter in Danville, Ill., June 29, after a brief illness, aged 76.

JOSEPH FULLER DURANT, M.D., Eclectic Medical Institute, Cincinnati, 1854, for several years alderman of Quincy, Ill., died at his home in that city, June 5, from heart disease, after a short illness, aged 74.

JOHN ADAMS WAKEMAN, M.D., Worthington Medical College, Medical Department of Ohio University, Worthington, Ohio, 1838; Hahnemann Medical College, Philadelphia, 1853; formerly of Centralia, Ill., died at the home of his daughter in Minneapolis, Minn., June 8, aged 91.

SAMUEL RUSH SAYERS, JR., M.D., was found dead in his room at the Gault House, Chicago, May 29, aged 30. The coroner's jury found that

he died from a gunshot wound inflicted with suicidal intent while despondent.

SAMUEL P. BOARDMAN, M.D., University of Wooster, Medical Department, Cleveland, Ohio, 1897; a prominent practitioner of Springfield, Ill., while a sufferer from melancholia, committed suicide by drowning in the Springfield reservoir, June 1.

JOHN W. REILLY, M.D., Bellevue Hospital Medical College, New York City, 1881, at one time a member of the Sangamon County (Ill.) Pension Board, died at his home in Springfield, June 27, from rheumatism of the heart, after a long illness, aged 47.

CHARLES VICTOR STARKE, M.D., University of Upsala, Sweden, 1889; a member of the American Medical Association, for two years a resident of the Argentine Republic, and since 1892 a practitioner of Rockford, Ill., died at his home in that city, June 10, from nephritis, after a protracted illness, aged 53.

JOHN ANDREW HARVEY, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1875; a veteran of the Civil war; sheriff of Schuyler County, Ill., in 1876; the oldest practicing physician of Rushville, Ill., died at his home in that place July 7, from cerebral hemorrhage, after an illness of four days, aged 71.

DR. ELIJAH FOSTER, one of the oldest practitioners in Southern Illinois, died at his home in Norris City, July 1. Dr. Foster was born in Claremont County, Ohio, in 1822. He came to Illinois in 1854, locating in Gallatin County, afterward moving to Roland, where he practiced for several years, finally locating in Norris City, where he resided for more than thirty years.

DR. EMERSON M. SUTTON, of Peoria, died in that city, from a pistol ball wound inflicted by his own hand during a period of mental aberration, occasioned by too intense application to professional responsibilities. Of an extremely sensitive and impressionable nature, he assumed to diagnose his own condition as one likely to grow progressively worse, and rather than face the further consequences of such probability he chose to end his anxiety and suffering by taking his own life. For several months Dr. Sutton had complained of intense pain in the head, and more or less deficiency in memory. He had always been a close student and arduous worker, and like many other men of equally brilliant natural powers could not be made to see in season that the strain was becoming too great. There was absolutely no other reason than that just assigned for Dr. Sutton's deplorable act. He enjoyed a large and lucrative practice, and his domestic associations and family ties were exceptionally pleasant and endearing. Likewise his professional relationships were warm and abiding, and his ambitions progressively secure. It was distinctly a case in which the weary mind mistook its own exhaustion as an evidence of degeneration, and rather than suffer pain and decrepitude, pursued the courage of its convictions to the point of self-destruction.

Dr. Emerson Sutton was born in Downer's Grove, DuPage county, Ill., June 5th, 1868. He was the son of Dr. J. E. Sutton, a prominent physician of Canton, Ill., who shortly after his son's birth removed to that city where the latter received his education in the public and high schools,

the same being supplemented by a course in the sciences under tutelage of the late Prof. John Wolf. He was a bright, intelligent and active child and grew to manhood with never a serious attack of illness. His intellectual capacity was above the average, with a high development of the emotions, making him through all stages of his life an agreeable companion, benevolent and kind, a model husband and a parent whom his children adored. The ideal of his life was perfection in everything he undertook, and sacrificed himself to a too strenuous effort to attain that end. A marked characteristic was the power of concentration and intense application to the attainment of any desired object. He threw all his powers of soul and body into his work, and could not rest while matters were undecided.

Something like a year before his death Dr. Sutton complained to his father that he did not know what was the matter with himself, since he could no longer concentrate his mind, or think continuously, and his brain felt as though "bound down with a tight band," and there were shooting pains through it. His father admonished him of the necessity for absolute rest, but though he did lessen somewhat the self-imposed strain, he committed the fatal error of clinging to the responsibilities of practice when there was no room for trifling.

Dr. Sutton took his medical degree from Bellevue Hospital Medical College, New York, in March, 1891. He continued in general practice with his father in Canton until September, 1895, when he removed to Peoria and devoted himself exclusively to the practice of surgery. Prior to that period he had spent some months in European clinics, and made a second tour of the kind in 1900. He was a good diagnostician, and a watchful, clever operator.

Dr. Sutton was a member of the Medical Staff of Cottage Hospital and allied himself with numerous professional associations, and contributed a considerable number of valuable papers bearing on his branch of work. He was a member of the American Medical Association, the Illinois State Medical Society, of the Surgical section of which he had been chairman; of the Western Surgical Society, the Military Traet Medical Association, and the Peoria City Medical Society. He was likewise a member of different social orders, such as the K. T., Shriners and Elks. He was a Republican in politics, was from early life connected with the Baptist Church, and at the time of his death was a member of the First Church of that denomination in Peoria.

On February 20th, 1895, Dr. Sutton was united in marriage with Miss Nannie Mage, of Havana, Ill., by whom he had five children, three of whom are living and two dead. The distinguishing domestic characteristics of his wife made Dr. Sutton's home life unusually delightful, and he loved it dearly. Certainly nothing but a fixed dread of impending mental disaster could have led him to take his own life after a kiss of affectionate warmth and a loving admonition to be courageous and all would yet be well.

O. B. W.

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No. 3

ORIGINAL ARTICLES

TONSILLECTOMY BY ELECTRO-CAUTERY DISSECTION.*

EDWIN PYNCHON, M.D.

Professor of Rhino-Laryngology and Otology, Chicago Eye, Ear, Nose and
Throat College, Chicago.

CHICAGO.

"Removal of Tonsillar Hypertrophy by Electro-Cautery Dissection" is the title under which I originally described this operation, the paper being first published in the *Journal of the American Medical Association*, Nov. 22, 1890.^{1 2} The operation was designed and first put in practice at my clinic at the Chicago Postgraduate Medical School in January of that year and, as the results attained were highly satisfactory, I continued to employ it in both clinical and private practice, though, as with every original procedure, it has, with time and increased experience, passed through certain evolutionary changes, so that the technique I at present employ is somewhat different from that employed at the start.³ Difficulties were from time to time met, which were successively overcome, particularly by improvement in the instruments and apparatus employed. At first, it being the age of the storage cell, I had to contend with the usual train of troubles which were common with that style of device for furnishing the electro-cautery current. Since adopting the excellent transformer of the Victor Electric Company I have had no further trouble in securing the required volume and amperage of current, so that the cautery points can be heated to the desired degree and continuously maintained thereat. The transition from storage cell to transformer relegated to the past the disagreeable experience of being compelled to either postpone or discontinue a partially executed operation, owing to the running down of a vacillating cell.

The operation of cautery dissection was designed in order that flat and degenerate tonsils could be removed in their entirety, as there can be no valid argument advanced for allowing any pathological tissue to remain, since such tissue can, at best, be regarded as only the remains of a

*Read at meeting of the Tri-State Medical Society at Galesburg, Ill., June 26-27, 1906.

former tonsil. Many of my operations are done to remove the diseased base remaining after a previous tonsillotomy.*

In early life the tonsils are detrimental chiefly on account of their size, whereby they act as an obstruction to respiration. If not at this time removed by the operation of tonsillotomy, the protruding portion of the



Fig. A.—Fauces in repose, with left tonsil partially covered by hypertrophied anterior pillar or plica triangularis.

tonsil gradually diminishes in size, hence the elaim of the old-time doctor that Nature effects a cure through atrophy. The fact is that, as the protruding portion diminishes, the buried base increases in size, hence the transition is largely a process of submersion. Furthermore, this change

is brought about by a low grade of inflammatory process, during which the lymphoid element melts away, while the follicular element relatively enlarges, hence a formation ensues of large crypts and lacunæ from which caseous, fetid material can be readily expressed. By the use of a bent probe it can be demonstrated that the crypts are as much as one-half inch



Fig. B.—"On the Gag," with arch showing "line of demarcation."

in depth.⁵ A tonsil of this description may easily escape the eye of the inexperienced observer, as it is often hidden behind the anterior pillar and may even, in fact, lie at the bottom of a distinct concavity between the pillars, so that it can only be seen when drawn up from its bed by the use of a vulsellum forceps, or when the patient is caused to gag

forcibly, when a bulging, ragged mass is revealed (Fig. B). When this condition of the tonsils is present, all of the mucous membrane back of the anterior pillars will be excessively red and more shiny than normal, constituting a chronic pharyngitis, while, on the pharynx, granular enlarge-

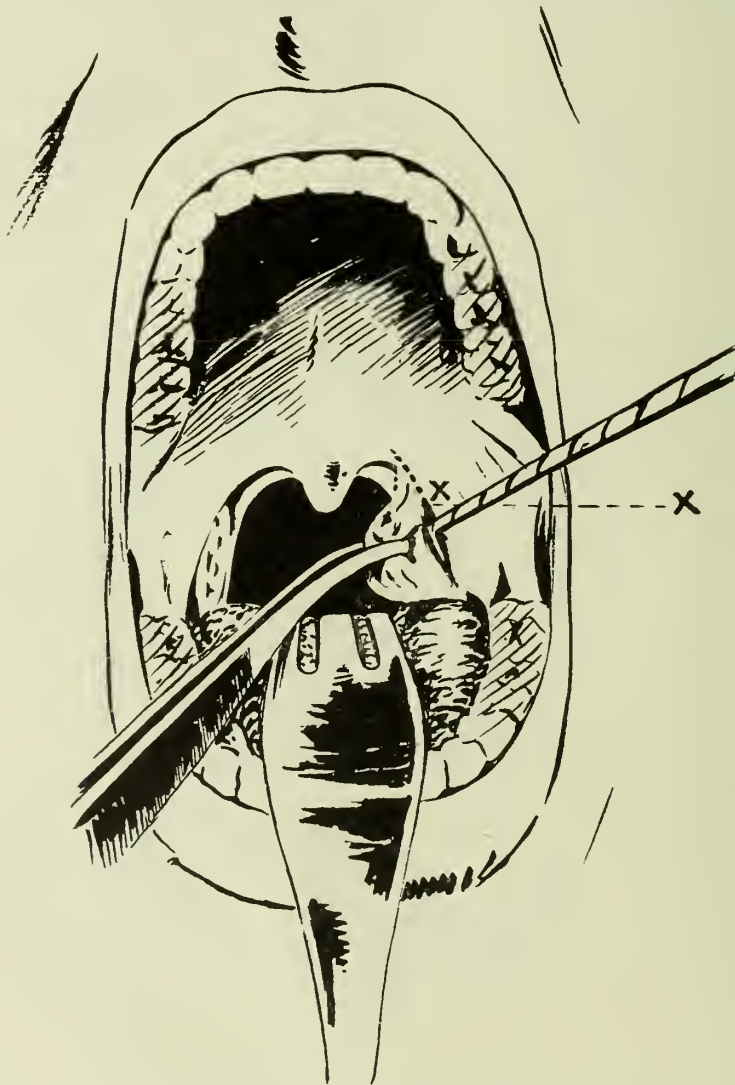


Fig. C.—Showing first or primary incision, beginning at point X and succeeding incisions by dotted lines.

ments are not infrequently observed. A thickening of the lateral bands of the pharynx is also frequently present, to which has been given the name pharyngitis hypertrophica lateralis. Between this area of redness and the mucous membrane further forward there is a distinct line of demarcation, intensified when the patient gags, and forming an arch, the

upper and central portion of which is lost in the uvula, which serves as a keystone (Fig. B). A free amount of frothy saliva completes the picture.⁴ The tongue is usually coated, indicative of digestive disturbance, and not infrequently an offensive breath is observed. Constipation is

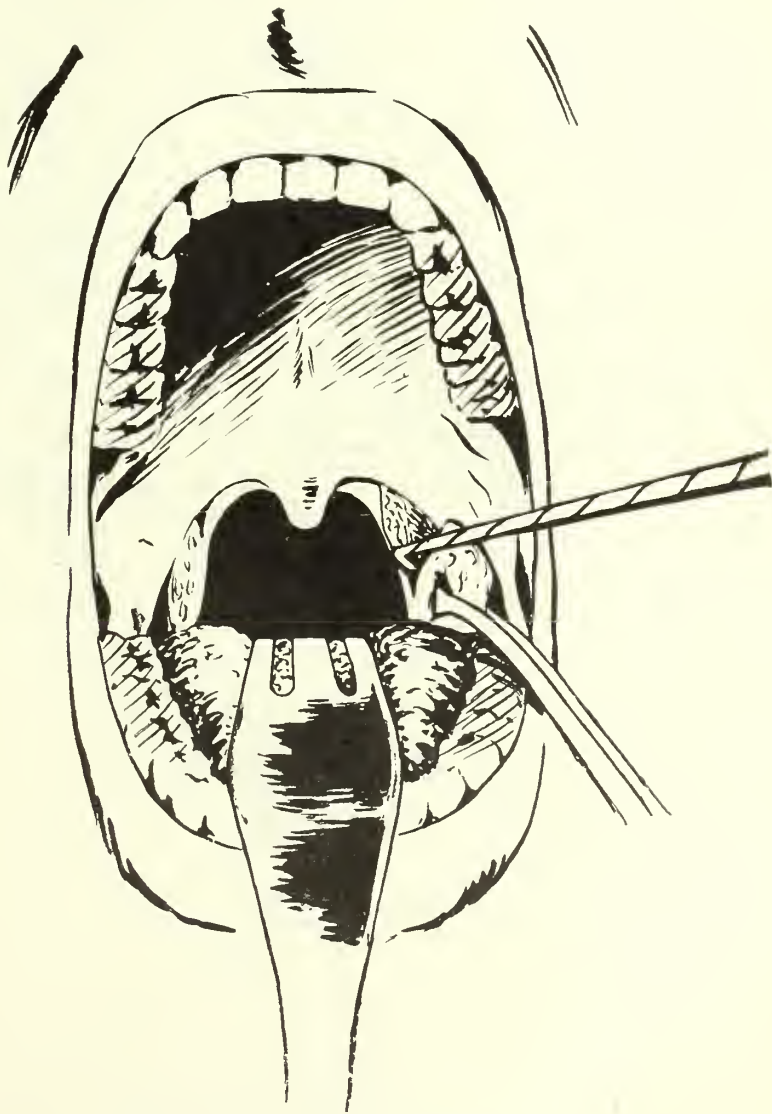


Fig. D.—Showing posterior incision.

generally complained of. The throat is often acknowledged to be sensitive and easily affected by exposure during inclement weather. One or more attacks of acute tonsillitis at some time in the past is often reported. If the patient is a vocalist, the voice will be described as being unreliable, or, instead, the report may be that of a lost voice. A spasmodic cough will

at times be mentioned and can often be excited by touching a sensitive point on the tonsil. There will also, occasionally, be observed a swelling and tenderness of the submaxillary or deep cervical lymphatics. While submersion of the tonsil is a condition most often seen in adults, it will

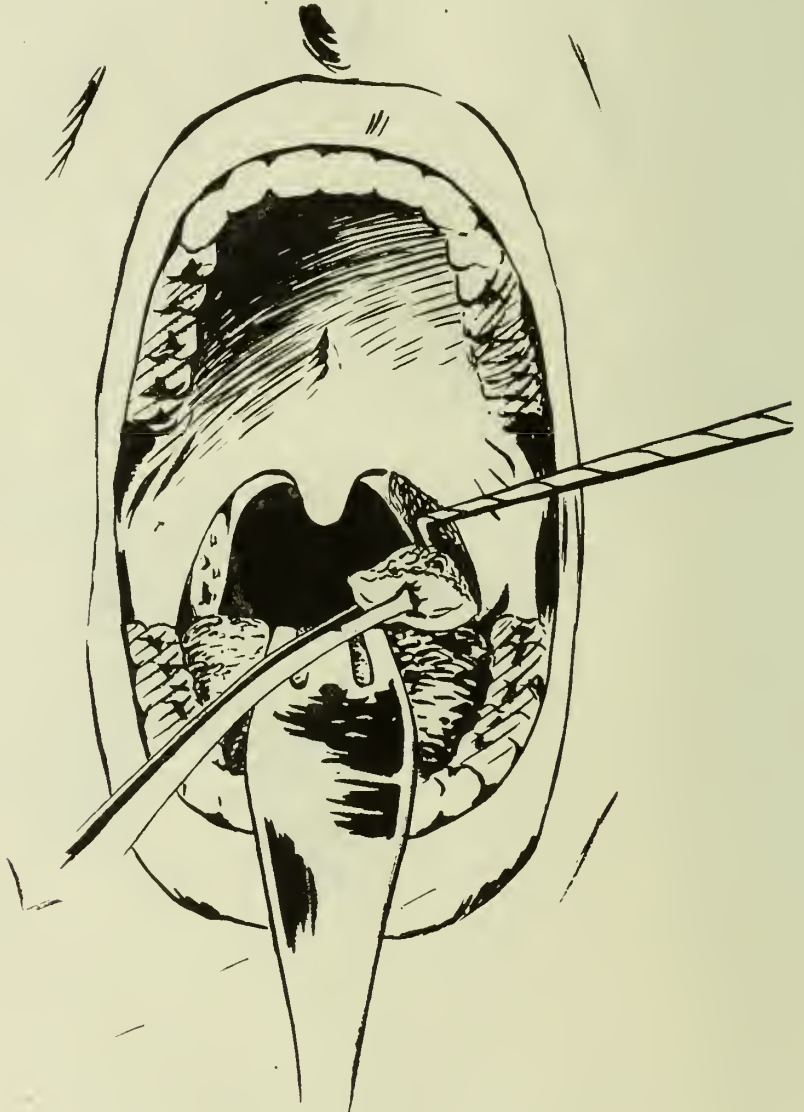


Fig. E.—Showing top of tonsil being pulled out as puncture is made.

not infrequently be observed to a certain degree in children, when it may be described as a condition of semi-submersion. The submerged or degenerate tonsil is often present without the patient having the slightest suspicion thereof, as there is never experienced any degree of acute in-

flammation. There are, though, other manifestations due to the tonsillar trouble which are rarely associated therewith by the patient.

As in several cases a susceptibility to acute attacks of coryza has subsided after a radical removal of diseased tonsils, it became clear that the

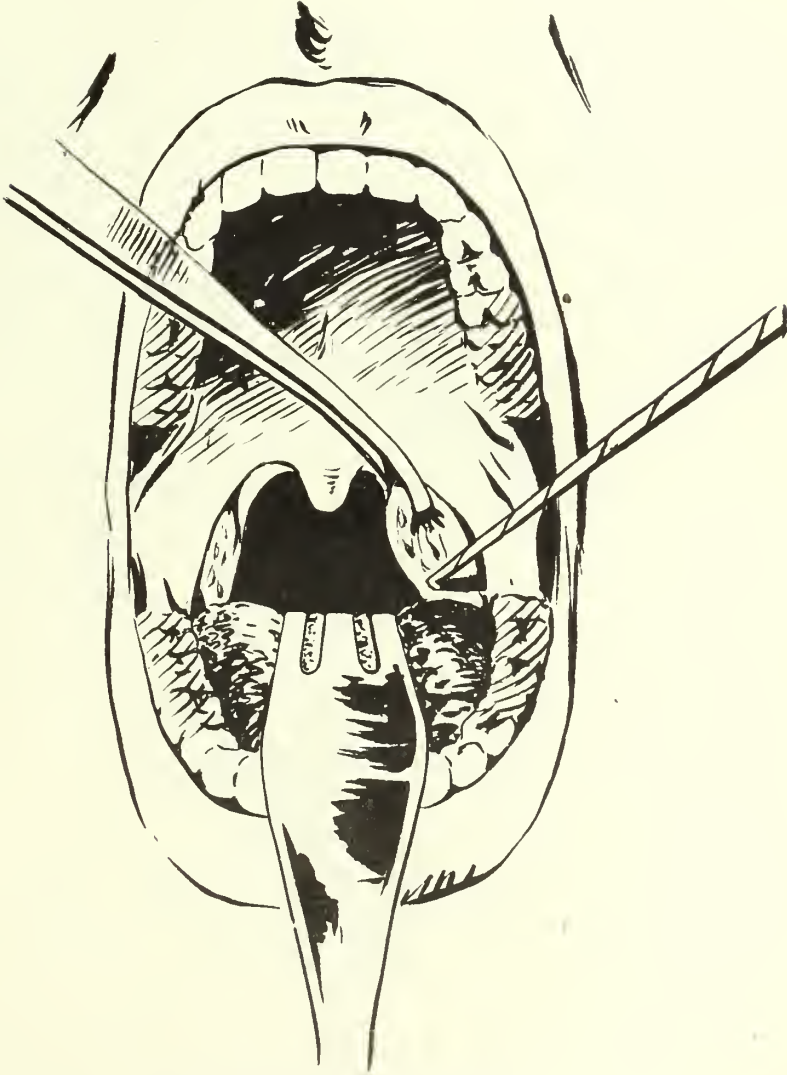


Fig. F.—Showing the bottom incision.

latter had a causative influence upon the former. Tubal occlusion with the secondary middle ear manifestations, and particularly tinnitus, are often benefited by the total removal of diseased tonsils. The relationship is well recognized between catarrhal conditions of either the pulmonary or gastro-intestinal tracts and the descent of malsecretions from the nasopharynx.⁶ As an active pair of degenerate tonsils can yield a

much larger daily crop of pathologic material than usually falls from the nose, it is safe to give the tonsils credit for being the greater evil of the two, particularly when, by microscopic and bacteriologic tests, the secretion therefrom is found to be even more noxious than the other. And,

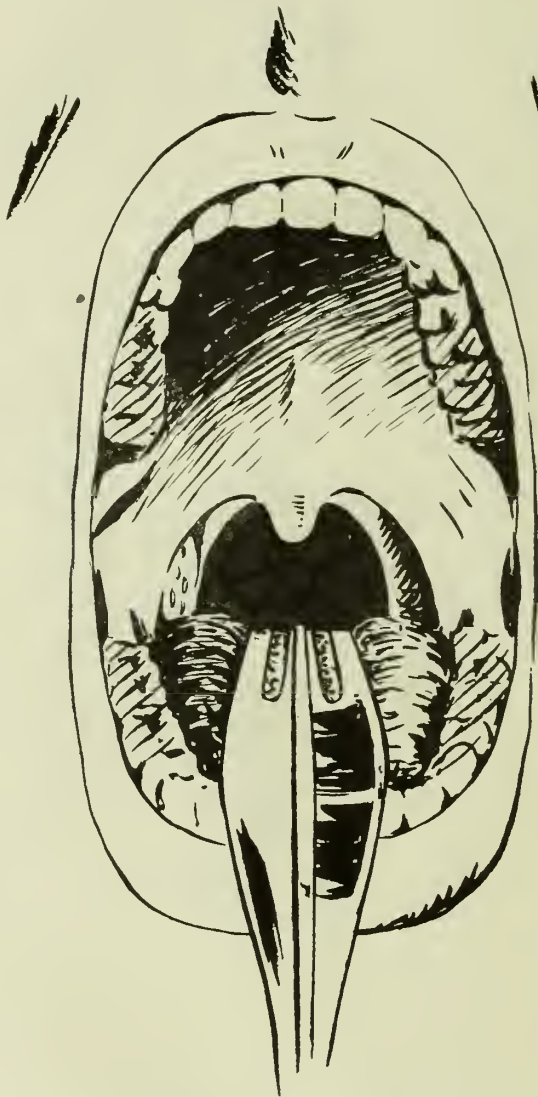


Fig. G.—Showing left tonsil out and tongue depressor with saliva ejector attached.

again, while the secretion from above is felt by the patient and is, during waking hours, to a large extent, expelled by expectoration, the secretion from the tonsils is chiefly squeezed out by deglutition while eating and, hence, is swallowed unobserved. Again, while postnasal secretions cause systemic infection mostly through their descent to either the pulmonary

or gastro-intestinal tracts, a different condition exists as regards the disposition of the toxic secretion generated in the diseased tonsil, for it is equally prone to being directly absorbed through either the lymphatics or the blood, and is thus at times the distinct cause of systemic troubles



Fig. H.—Showing both tonsils out.

at distant points.^{7 8} As tubercular germs are frequently found in the tonsils, much attention has of late been given to this avenue for systemic infection. The intimate connection between the tonsils, the deep cervical lymphatics and the pleural cavity has been observed by different writers and explains the ease of pulmonary invasion, as shown by Wood⁹

in a recent paper based upon his personal experiments, as well as upon the findings of other investigators.

Having become fully convinced of the intensely pathologic nature of the degenerate tonsil, the question arose as to the best method for its thorough eradication. Owing to its being, to a large extent, submerged (Fig. A), it was necessary that the successful operation should leave a pronounced depression or concavity, instead of a plane surface as after ordinary tonsillotomy. Furthermore, as the operation was chiefly to re-

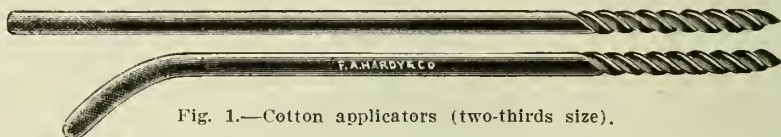


Fig. 1.—Cotton applicators (two-thirds size).

move diseased tissue it was more essential that the incisions should be made with deliberation and in as nearly a bloodless field as possible. The most feasible plan seemed to be a dissection with a cautery point, as, when properly operated, each little vessel should be sealed as it is severed, thereby giving the bloodless field so much desired. It must be remembered that, if the point is too hot, it will cut like a knife and not close the severed vessel, while, on the other hand, if not hot enough, it will not advance through the tissue, nor will it properly release itself from the eschar, and will thus tear it, so, in either event, hemorrhage must ensue. An electric generator is, therefore, required whereby the desired heat of the cautery point can be maintained, which I found to be a nearly white heat when exposed in the open air.

If the patient possesses an intolerant throat, as is generally the case with degenerate tonsils, I direct him to practice several times daily for a few days a sort of drill whereby the faucial intolerance can, to a large extent, be overcome. This drill is much like that of the sword swallower and consists of titillating the fauces with different substances, such as the finger, a spoon handle, the handle of a tooth brush, etc. In order to instruct the patient as to the method, I give him a printed sheet of direc-

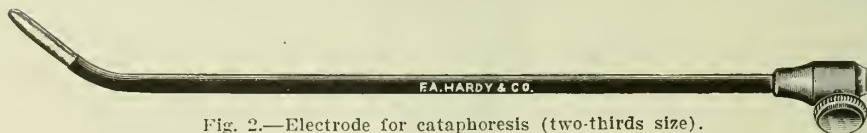


Fig. 2.—Electrode for cataphoresis (two-thirds size).

tions, in which is fully described the course to follow. I never operate when an acute inflammation is present.

Sufficient anesthesia is generally secured by swabbing the parts with a solution of cocain. I use a large cotton applicator (Fig. 1) and have the patient make the application once a minute for about twenty minutes, one swab serving for six or eight applications, when a fresh swab is given him. For the first two swabs I use a 10 per cent. solution of cocain, while, for the third swab, a 20 per cent. solution is used. I caution him to expectorate from time to time and not to swallow the cocain. My preference is to operate after the patient has had a hearty meat meal, in this way diminishing the tendency to intoxication from the drug. I do not

recall ever having seen prostration from cocain when thus used in the fauces. My solutions contain one-half as much carbolic acid as there is of the cocain. In one case a complete anesthesia was secured from the use of only a 5 per cent. solution, though my usual custom is to use the 20 per cent. solution as described, which is effective in 90 per cent. of cases, so that but little or no complaint is made as to pain. Occasionally,

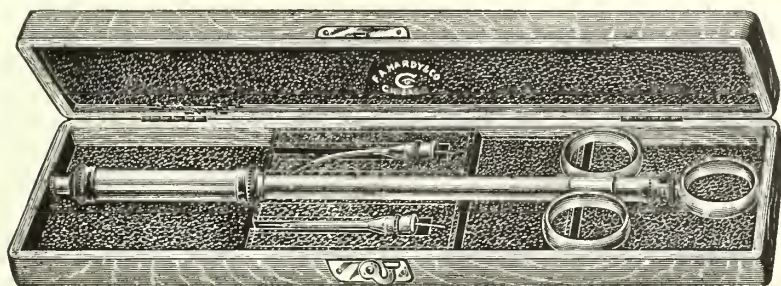


Fig. 3.—Tonsil syringe (half size).

I have to use a 33 per cent. solution and have in a few cases applied powdered cocain on the moistened swab which gives 100 per cent., or full strength. In rare cases the patient does not anesthetize by local applications, so I resort to other methods. In a few cases I have employed cataphoresis with success, using a special applicator (Fig 2) for the positive current, though I more often use deep injections of a sterilized one-half of 1 per cent. solution of cocain without the addition of carbolic acid. For this purpose I employ my tonsil hypodermic syringe,¹⁰ and find very delicate needles the best for deep injections. I formerly injected only beneath the mucous membrane of the pillars, so as to produce a bleb, but have latterly been convinced that the deep injections are more effi-



Fig. 4.—New cautery handle (three-fifths size).

cient when injected deep into the pillars, as well as into the base of the tonsil, only a few minims at each point selected, say at a dozen or more points (Fig. 3).

By resorting to either or both of these latter two methods, in conjunction with the swab, I can secure anesthesia in all cases. During the operation, if a sensitive point is reached, I apply for a moment a 20 per cent. swab in the wound. In any case where excitement is present, or a prostration is feared, it can be either overcome or averted by giving a ten-drop dose of volasem, which is a proprietary compound and is made from an extract of wood-violet to which strophanthus and calabar bean are added.¹¹

I am at present using a cautery handle which differs from the one I formerly employed.¹² The essential feature in this new handle is that

the contact is secured by the sliding of one tube in another, whereby the possibility of corrosion is overcome and a perfect contact is always assured. By a spring mechanism the current is automatically broken as soon as pressure is released from the contact lever. The electrode sockets are made extra long and are also conical, as well as the handle ends of the electrode, so that perfect contact and a tight fit is secured, which is



Fig. 5.—Tonsil cautery electrodes (four-fifths size).

entirely free from the usual and annoying wobble heretofore always present. This new handle has been made, in accordance with my suggestions, by the Victor Electric Company. A windlass for the hot snare, while not shown in the cut, is supplied with the handle (Fig. 4).

The electrodes I now use are of a new style made by the Converse Electric Company, and are thoroughly aseptic, being made of two semi-circular wires twisted about a strip of fiber (Fig. 5). For tonsil work I have them $5\frac{1}{2}$ inches in length. The burning point is of irido-platinum, No. 23 gauge. I have used a larger wire (even as coarse as a

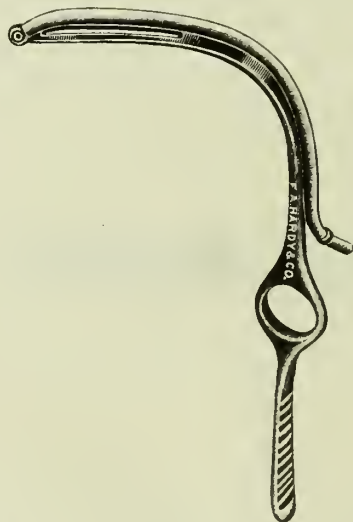


Fig. 6.—Tongue depressor with saliva ejector (one-fourth size).

No. 20 gauge) in order to get greater rigidity when heated. By having the cautery rheostat correctly placed, the No. 23 gauge gives the best results and, if not pushed too fast, in other words, if allowed to burn its way through the tissue with moderate traction, it will not bend out of shape. The disadvantage of the coarser wire is that it radiates too much heat. A red hot needle can be held quite close to the cheek without in-

convenience, while a red hot poker held at the same distance would burn, and yet the degree of heat would be the same in each case. though the volume of heat bears direct ratio to the bulk. In addition, the finer the wire the more rapidly it both heats and cools, which is of great advantage in this work. By using the finer wire, the burn is more superficial and, therefore, causes less soreness than did the coarser wire which I formerly employed. The points are bent in two directions, either vertical or lateral from the line of the handle, and are reversible, though, in use, the



Fig. 7.—Spring tonsil forceps No. 1 (three-fifths size).

electrode is generally so placed that the point inclines downward. In the illustration different degrees of bend are shown, Nos. 1 and 2, at an angle of about 45 degrees, being most often required. There are conditions in which Nos. 3, 4 or 5 are more convenient to use. The cords are extra heavy and five feet in length. With nervous patients a head rest is at times advantageous. With the new Allison rhinological chair, a good head rest is furnished and any desirable position or degree of elevation of either seat or back is easily attained. While not a necessity, a good fountain cuspidor is more than a convenience and gives an extra advantage owing to the saliva ejector attached.

During the operation I have the patient with his right hand manage the tongue depressor. This occupies his mind. Furthermore, he is less liable to induce gagging than when the tongue depressor is held by an assistant. Latterly, I have had a saliva ejector attached to the depressor (Figs. 6 and G), whereby either blood or saliva is promptly removed so the patient does not interrupt the operation to expectorate. When operating without the fountain cuspidor the same tongue depressor is employed minus the ejector.¹⁰

Being right handed, I generally operate on the patient's left tonsil first. For this tonsil an electrode is used, the point of which is so bent as to be in line with the handle (2 L, Fig. 5). The tonsil is then securely grasped near its center with the mouse-toothed No. 1 forceps (Fig. 7) and forcibly lifted from its bed. It will thus be seen to rise and move



Fig. 8.—Spring tonsil forceps No. 2 (two-fifths size).

about beneath the anterior pillar, and its anterior boundary will be but slightly back of the previously described line of demarcation, while the top of the tonsil will be found to be as high or higher than a horizontal line drawn from the base of the uvula. The heated cautery point is then entered to a depth of nearly one-half inch at the anterior margin of the tonsil quite near to its superior border, and a slightly curved incision is made downward about parallel with the demarcation line, the tonsil

meantime being pulled outward and backward (Fig. C). Instead of one long incision, a series of shorter incisions or dissections are more often made down or near to the pillar attachment to the tongue, becoming more shallow as the bottom is approached. A return is now made to the starting point and, by one or more shallow incisions, the upper margin of the tonsil is followed to an apex above its center by upward strokes, when by downward and deeper cuts the tonsil is separated from the posterior pillar, the traction meantime being changed to outward and forward (Fig. D). The tonsil forceps is now made to grasp the upper portion of the tonsil and, with suitable traction either forward or backward as required, by continuous dissection the top of the tonsil is disengaged from the supratonsillar fossa, so the remaining depression at this point will be about five-eighths of an inch in depth. After the top of the tonsil is thus thoroughly released, with the traction continued as before, I next make a downward puncture in the middle of the wound, with the heated point at the junction of the tonsil with the pharyngeal aponeurosis (Fig. E) and,

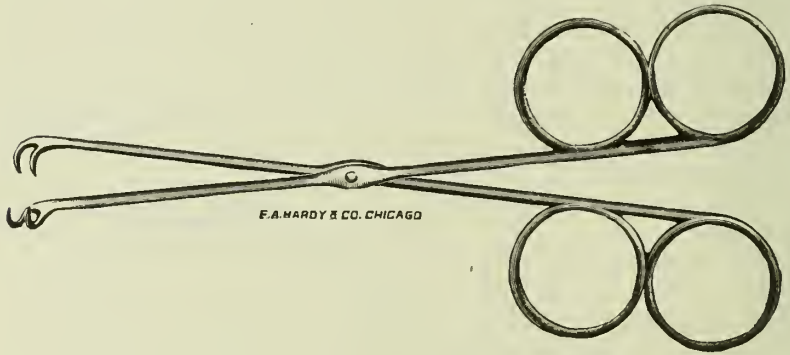


Fig. 9.—Scissors vulsellum tonsil forceps (two-thirds size).

from this puncture, dissect forward until the front margin is reached when, by a return to the point of puncture, I dissect rearward to the posterior margin. In this way the incisions are gradually continued downward and outward at an angle so as to be near the surface when the bottom is reached. By now pulling the tonsil upward and changing the position of the electrode by entering it at the bottom of the primary incision, point upward and handle tilted about 20 degrees above the horizontal, with one or two curved backward strokes (Fig. F), the bottom of the posterior incision is reached. The tonsil is now attached by only a pedicle near its bottom, which can be readily severed by first placing the electrode, with point turned downward and outward, against its front edge as the tonsil is being pulled outward and backward. Then, with a firm backward and upward lift with the electrode, the tonsil is swung well forward so as to stretch the pedicle over the cautery point, which is then heated and the pedicle severed. At times this same method of procedure can be advantageously employed at other and preceding stages of the operation and in removing remnants.

As during the entire operation firm outward traction upon the tonsil

is employed, the work is, in reality, all done in plain sight, and not in a hole, though after the operation a deep hole remains, deepest at its upper margin and gradually scaling outward to the surface at its base; hence the submerged tonsil somewhat resembles a wedge in shape. The remaining wound is much larger than the tonsil removed, which is, in part, due to some tissue having been destroyed by the cautery, but more to the elasticity of the pillars after being disengaged from the tonsil which previously bound them together (Fig. G).

The pulling out of the tonsil as described is permitted by the stretching of the cellular tissue beneath the pharyngeal aponeurosis, which latter constitutes the bottom of the resulting wound. In fact, this structure, by the strong traction when the operation is half way done, may, if not too much bound down by inflammatory adhesions from preceding attacks of quinsy, bow outward to such a degree that the dissections, instead of being on the line of a concavity, are really on the line of a convexity, like the peeling of an orange, in order not to penetrate the aponeurosis. The direction of the incision can at any time be easily ascertained by releasing the forceps traction for a moment, when the parts will resume their normal position.

In this way the entire tonsil is removed, including all of the patho-

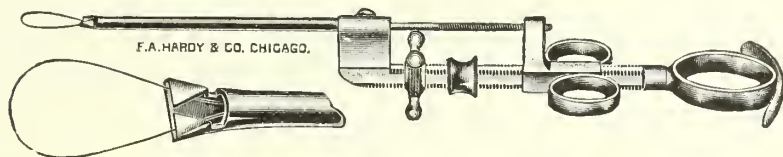


Fig. 10.—Author's tonsil snare (one-third size).

logic follicular element. Formerly, I divided the operation in two steps, two weeks apart, removing, at first, only the upper half, but latterly I remove the entire tonsil at a sitting, except in rare cases where hemorrhage is encountered. In some cases, the surface of the tonsil is so rotten that the No. 1 forceps tears out. In such cases, I use the No. 2 forceps with more mouse teeth and further fortified with opposing serrated surfaces (Fig. 8). These latter are often convenient for grasping sidewise, either front or rear, any small remaining remnant. These forceps are both spring forceps which automatically disengage and release their hold as soon as pressure is removed and have no spring lock, which I consider a detriment.

Occasionally, where the tonsil is bound down by adhesions due to previous acute inflammatory attacks, in combination with the friable or rotten surface alluded to, a forceps is required which will take a more forcible and deeper hold, when I employ my scissors vulsellum tonsil forceps (Fig. 9) with best results.¹³

Occasionally, when faucial intolerance is pronounced, and when the tendency to gag is increased by the tilting over of the nearly detached tonsil so that it touches the tongue, instead of completing the operation with the cautery point, I sever the pedicle with the cold snare¹⁴ which causes a moderate amount of hemorrhage, though easily controlled by iced

gargles. I also use the snare (Fig. 10) in the same way for completing the operation, if the operative field is much obscured by hemorrhage.

The operation as described usually requires from ten to twenty minutes, though in one case I removed an entire tonsil in two minutes and a half. This operation, particularly in a sensitive throat, requires a certain degree of dexterity which can only be acquired by practice.

In the operation as described, it might seem to the spectator that the patient is being needlessly robbed of a good deal of the anterior pillar. Formerly, I tried to leave all that seemed to be pillar, though it necessitated the formation of a pocket in the wound if all of the tonsil was removed, and thus gave increased discomfort and also retarded healing. Another and more important fault from trying to leave all of the pillar was the failure to remove all of the tonsillar tissue lying beneath this pillar covering; hence a continuation to a limited degree of the pathologic condition which the operation was intended to remedy. I soon became convinced that, in this condition of the tonsil, the anterior pillar was also hypertrophied and that the posterior half, which covers the tonsil, was chiefly a mucous membrane containing little or no muscular tissue, it being often spread out so as to cover the lower half of the tonsil (Fig. B, left tonsil). In some cases this lower portion of the anterior

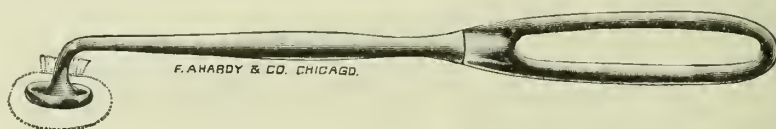


Fig. 11.—Tonsil presser (one-half size).

pillar, when extending backward over the tonsil as described, is so thick that it may be mistaken for a portion of the tonsil itself. In no case by following my described line of incision has the patient, after healing of the wound, given evidence of having sustained any loss of either structure or function.

With the submerged tonsil the posterior pillar is generally quite thoroughly attached thereto and has often lost all structural resemblance to pillar tissue, seeming instead to be a part of the tonsil. In fact, the two pillars and intervening tonsil often constitute an agglutinated hypertrophied mass, so that, when the throat is in repose, it presents simply a flat surface. In all cases I dissect out a posterior pillar which during the process of healing assumes the appearance of a normal pillar, notwithstanding its previous degenerate aspect. In operating the second or right tonsil, generally two weeks after the first, being right handed, I use at the start an electrode, the point of which is nearly in line with the shaft (No. 3, Fig. 5), and with this make the primary incision at the posterior edge of the anterior pillar, as well as the second incision to the apex, and then a short start downward on the posterior incision, but after this I change to an electrode, the point of which is so bent as to be at a right angle to the line of the handle, the bend being downward (No. 1 R, Fig. 5). Another difference which follows this change of bend is the following: When operating the left tonsil, in the making of all downward incisions,

the handle is swung from the horizontal position 90 degrees to the vertical. When operating on the right tonsil, the handle is held horizontal most of the time, the downward incisions being made by a downward and outward pull either forward or rearward. After the change is made to the angular electrode, the operation is continued much as described for operating on the left tonsil, except when making the bottom surface incision I enter the point at the bottom of the posterior incision, the handle meantime being swung downward and beyond the vertical to the extent of about 20 degrees, which causes the electrode point to tilt upward to the same degree. I then cut forward to the bottom of the primary anterior incision, and, while severing the pedicle, I enter the electrode at the rear thereof, the point tilting upward as before, and cut forward and outward, in this way reversing the process employed with the left tonsil. For these last two steps, if time is taken to change the electrodes, a more convenient way is to use a left tonsil electrode so placed in the handle that the tip points upward.

After the tonsil is half removed, the wound being dry, I swab all the

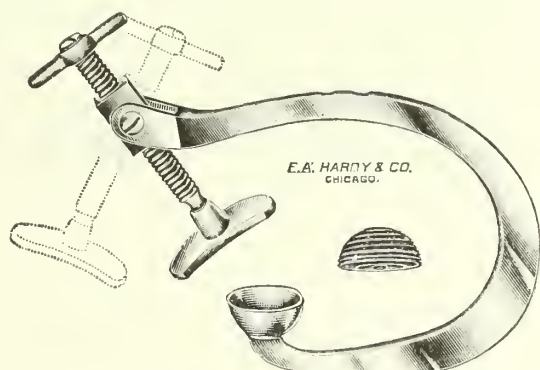


Fig. 12.—Author's tonsil hemostat (one-half size).

traumatic surface, including that of the loosened tonsil, with a 90-grain solution of argentum nitras before separating the lower half. In this way, if a little hemorrhage occurs while doing the lower half, the parts painted with silver are not so likely to bleed by sympathy. Before doing this I have seen bleeding extend to all parts of the wound if a little bleeder is struck at any time when near the end. In this way by the use of silver and careful work I frequently remove a tonsil without the loss of a single drop of blood from the wound and without the saliva being discolored by the few drops of blood which always exude at the points where the forceps takes hold. In case a slight hemorrhage begins at any point, it can generally be stopped by a series of touches with the cautery point at a cherry-red heat, and often without the knowledge of the patient, so that he may think that the operation is bloodless.

As the tonsil has such a rich supply of blood and is in such close proximity of the larger vessels, branches of which are at times either anomalous or enlarged, any tonsil operation is likely to produce a hemorrhage.

In my experience, hemorrhage has been much less frequent in late years than formerly, which is, in part, due to improved technique, though largely due to the taking of more active and prompt steps to control it in its incipency. A large majority of all hemorrhages occurring can be controlled by gargling with an iced alum solution or by the use of the tannogallic acid mixture.³ When these fail, a hypodermic injection of either ergotole or morphin is generally effective, particularly in combination with the feeling of faintness which is often produced by the injection.

For the control of tonsillar hemorrhage, pressure is the most positive procedure to adopt and, in case of a little spurter, it can generally be arrested by digital pressure if promptly applied. A more convenient method is to employ a tonsil presser (Fig. 11), the pad of which may, if desired, be moistened with a hemostatic, Monsel's solution being the best. In case prolonged pressure is required, it is wise to apply a tonsil hemostat (Fig. 12). In an experience of seventeen years in tonsil work, I have applied the hemostat only four times, in two cases it being done to hasten the stoppage of a hemorrhage which gave every evidence of being near its finish.¹⁴

Owing to paralysis of the muscular coats of the vessels from the cocaine, a delayed primary hemorrhage is liable to occur within twelve



Fig. 13.—Tip of lateral swing atomizer (full size).

hours of the operation, though this rarely occurs in favorable cases, if the patient follows directions by avoiding all physical exertion and prolonged efforts at conversation. I also advise against the recumbent posture during the first night's sleep and recommend passing the night in a tilted rocker or a reclining chair. The greatest danger point is 10 or 12 hours after operation, when the patient drops in a doze and begins to snore. When the vessels are atheromatous, as in rheumatism or kidney disease, or after a life of intemperance, there is an increased liability to hemorrhage. Women are less liable to hemorrhage than men.

The fatalities reported after tonsillotomy have generally been due to the leaving of a fibrous base which prevented the closure of bleeding vessels. In case of a fibrous tonsil, the operation of cautery dissection gives greatest promise of immunity from hemorrhage, as the lines of incision are below the fibrous tissue.

Occasionally following the operation, there is some febrile reaction, which is relieved by one-drop doses of the tincture of aconite given hourly. If the tongue becomes much coated, I order one or two doses of sulphate of magnesia. Secondary hemorrhage may occur at any time during the first week from the separation of portions of the slough, though this is rare and the likelihood of its occurring diminishes day by day from the time of operation. In any event if it occurs it can be quickly controlled by iced gargles.

As an after-treatment I advise soft foods for a few days and the fre-

quent use of a gargle of Merck's bicarbonate of soda, about one dram to half a pint of water. I also advise the use, every hour or two, of an anti-septic gargle as follows:

R. Hydrozone	3ii
Thymoline	3iv
Aq. ext. hamamelis ad.....	Oi

Sig.: Use 3i with aqua 3i as a gargle every two hours.

During the daily office treatments, I first spray the wound with the D-P solution,¹⁴ using low air pressure. As the spray is to be directed sidewise, and as it is desirable to hold the spray bottle upright, a device is advantageous whereby the former can be accomplished. At my suggestion, the DeVilbiss Manufacturing Company modified their excellent atomizer so that this can be done and, as the revolving end piece can be swung about laterally as desired, it is equally suitable for either side (Fig. 13). As a local application after the spraying, I have found nothing better than "eisen-glycerin," consisting of equal parts of tincture ferri chloridi and glycerin, with which the wound is daily massaged with the long bent cotton applicator, gently at first, but with increased vigor as the soreness diminishes, in order to remove adventitious granulations and make the wound heal up smoothly and solidly. While most patients prefer soft foods for a week or ten days, I have had a few cases wherein there was practically not the loss of a meal. After the first week, the progress is very rapid and the wound is practically healed in two weeks' time. In order to guide the patient properly as to diet and other after-treatment, as well as to direct what to do in event of an emergency, as a hemorrhage, I give him a printed sheet of directions, in which is incorporated all needed advice. By these means it is rare that the patient is incapacity from attending to his usual duties.

During the operation of tonsillectomy in case of a "small diseased" or degenerate tonsil it is no uncommon occurrence to encounter cysts which are filled with a softened cheesy and malodorous secretion, which cysts are at times as large as a good-sized green pea.³

As to the results derived from the operation described, the patient, in addition to a permanent immunity against future attacks of acute tonsillitis,¹⁵ will experience such improvement in the general health as might be expected from a loss of the former contaminating influence derived from diseased tonsils, hence the operation is recommended not only to relieve past or present bad effects, but also as a prophylactic step, whereby future troubles are averted, as, for example, chronic catarrhal deafness or the chances of tubercular infection.

Following the operation there is almost an invariable improvement in digestion and assimilation with an increased intestinal activity, whereby the former constipation is corrected, as well as the bad breath. There is often an increase in weight and a clearing up of a former muddy complexion,¹⁷ which is always appreciated by lady patients. The tendency to rheumatism is also diminished or, if present, an eventual cure thereof may be attained.

Furthermore, a marked improvement follows as regards the former

faucial redness with a fading away of the granular pharyngitis, and, in a vocalist, an improvement in the singing voice with an elevation in the high register of two or three notes.¹⁸

Correct patterns of the instruments I employ in this operation are kept in stock by F. A. Hardy & Co., of Chicago.

103 State Street.

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THE OTTAWA TENT COLONY.

J. W. PETTIT, M.D.

OTTAWA.

In complying with a request to give a brief history of the Ottawa Tent Colony and the work it has done, permit me to say, by way of preface, that this institution is a part of the very systematic and comprehensive crusade against tuberculosis which was inaugurated by the Illinois State Medical Society at its meeting in Bloomington in 1904. The special feature of the program was a symposium on tuberculosis, in which the information given was presented in popular language and was intended to stimulate the medical profession and enlighten the laity. The essayists were all men who are well equipped and of high standing in the profession. To Dr. George W. Webster, president of the Illinois State Board of Health, was assigned the subject of "Mortality from Tuberculosis in Illinois for the Years 1902 and 1903," and to Dr. Chas. L. Mix, "Factors Causing Consumption and Furthering Its Spread; Suggestions for Its Prevention." "The Diagnosis of Pulmonary Tuberculosis," by Dr. Frank Billings; "The Treatment of Tuberculosis," by Dr. R. B. Preble; "The Annual Economic Loss to Illinois from Tuberculosis," by Dr. Homer M. Thomas, and "The Duty of the State in Restricting Tuberculosis," by Dr. Harold N. Moyer, all of Chicago, were other papers.

This symposium was presented to a very large audience. The addresses created so much interest that the press of the state gave the facts and opinions expressed very wide publicity, and it is safe to say that, within one week after their presentation, the subject of tuberculosis was brought directly to the attention of every reading person in the State of Illinois.

Inasmuch as great emphasis was laid upon the fact that tuberculosis could be cured anywhere, and in view of the further fact that this statement was in such direct opposition to what had previously been taught, it was believed by those directly engaged in the work that, in order to establish this fact, it would be necessary to demonstrate the curability of tuberculosis in our Illinois climate, a thing hitherto generally believed impossible. At the suggestion and with the aid and co-operation of prominent members of the Illinois State Medical Society, the writer was induced to establish a tent colony at Ottawa, primarily for the purpose of demonstrating the curability of tuberculosis in this climate and incidentally to



Fig. 1.—General View of Camp and Administration Building.

influence the legislature to provide a state sanatorium for the tuberculous poor.

The tent colony was opened with two patients, July 1, 1904. The equipment and accommodations were necessarily very simple, being nothing more than those usually afforded by an ordinary camping outfit. Through the kindly assistance and co-operation of the medical profession and the secular press, the number of patients increased so rapidly that it was difficult to provide accommodations for them, and, within six weeks from the time of the opening, we had eighteen patients. By the first of October the number had increased to thirty. Up to this time all our work had been done in tents. It then became necessary to provide winter quarters, which we did by remodeling an old building which had been used as a dance hall in a public park near by. This provided us with

administration facilities, which were not very inviting, but which would protect us from the inclemency of the winter weather. A part of the building was set aside for the housing of patients through the winter. In the meantime the patients were allowed to remain in their tents, with the understanding that on the approach of cold weather they would be expected to move indoors. Much to our surprise, the patients preferred to remain in their tents all winter, the coldest experienced in this section of the country during the last thirty years. This they did of their own accord. Instead of suffering from the cold, they were comfortable and



Fig. 2—A Street of Tents.

rather enjoyed the experience. Several of those who were accustomed to living in frame houses declared they would have been less comfortable had they been at home. Even new arrivals during the extremely cold weather insisted upon going to tents. This was believed to be too severe a test, but in no instance had we cause to regret yielding to the entreaties of the patients. Their action is the more remarkable when we take into account the fact that many, if not most of them, had come from homes where it was difficult to drive them away from the vitiated and superheated atmosphere of badly ventilated houses. While our accommodations were very meager and unsatisfactory in many respects, the results were equally as good as those obtained during the last winter with a much more complete equipment and pleasant surroundings. This experience

is another illustration of the satisfactory results which may be obtained from a simple and inexpensive equipment.

Tent life as carried out in the treatment of tuberculosists soon becomes thoroughly enjoyable. Before beginning such a life patients almost invariably entertain exaggerated ideas of its dangers and inconveniences. A short trial soon dispels this fear and they are with difficulty induced to return to indoor life. Experience teaches that the results are even better in winter than in summer. A tuberculous patient, when well fed and warmly clad, feels the exhilarating effects of cold weather quite as much as the normal person.

The total number of patients admitted to April 1, 1906, was 255, of which 49 were then under treatment. Of the 151 who were discharged or who left of their own accord, 21 were incipient, 81 were advanced and 49 far advanced cases. Fifty-five remained less than thirty days and are not included in our statistics. The results have been fully equal to those obtained elsewhere with the same class of patients.

The obstacles to success have been no greater than were to be expected. The advanced stage of the disease in many cases and the various causes which operate to prevent patients from continuing treatment are responsible for a large number of failures. These conditions are improving very rapidly, as the public and profession are learning the limitations and conditions of treatment. Opposition to the location of an institution of this character was very decided and for a time seriously threatened its existence. We experienced the unfortunate conditions which have arisen as a result of the unqualified statements so frequently made as to the contagiousness of the disease. The people have very naturally associated the danger from tuberculosis with other contagious diseases with whose virulence they are more familiar. By tact and diplomacy we succeeded in enlisting the aid of a few of the more intelligent and reasonable citizens and by bringing the community into close touch with our work have succeeded in convincing them that sanatoria for the treatment of tuberculosis are not a menace to the people in the communities where they are located. We have so far succeeded in doing away with this unreasonable prejudice that it is safe to say that if an attempt were made to remove this institution to another locality strenuous efforts would be made to retain it. This in itself is a decided advantage to the cause in general, and serves to illustrate not only that these institutions are not a menace, but that the people can be so convinced where the necessary care and discretion is used in handling so delicate a proposition.

At its inception there was no thought of conducting the enterprise beyond the session of the legislature for 1904-5. It was hoped and expected that it would be the nucleus of a charitable institution. The failure of the legislature to make the necessary appropriation left one of two alternatives, either to discontinue it or conduct it as a private enterprise. The demonstration created a demand for an institution of this character. Those most largely responsible for its existence saw very clearly that if the enterprise were abandoned the reasons might not generally be understood, and the fact that it had been discontinued would be

regarded as an evidence of failure to carry out the primary object, which was to demonstrate the curability of tuberculosis in the climate of this State; hence the present management were induced to conduct it as a private enterprise.

Improvements involving an expenditure of \$40,000 have been or are in process of being made, which provide accommodations for one hundred patients. The improvements include an administration building, water works, first-class bath house, infirmary, better equipped tents, beautifying the grounds, etc. In order to place the diet of patients on a more



Fig. 3.—Dining Room in Administration Building.

scientific basis, domestic science has been introduced under the direction of an experienced graduate of one of the foremost technical schools in the country. Instead of "forced feeding," as it is ordinarily practiced, we provide a balanced ration, and encourage our patients to eat more than the ordinary amount by providing well-cooked food of the best quality, temptingly served. The tedium of the treatment is relieved by music, entertainments, lectures, launches, suitable amusements, etc.

While the institution must of necessity be conducted as a private enterprise, it is still under the fostering care of the prominent medical men who were influential in establishing it, and will remain a public institution in effect, although it must be supported by the contributions of patients. It is believed that its educational and statistical value will be even greater than if it were a State institution, for the reason that it

will not be subject to the fluctuating and uncertain conditions surrounding a public institution, but will be absolutely dominated by medical influences. This will give an opportunity to work out many problems not otherwise possible.

The four things thus far successfully demonstrated by the Ottawa Tent Colony are: First, that tuberculosis can be cured in Illinois. This, of course, was not more than was expected by those familiar with the modern treatment, but was necessary to demonstrate it to the public and profession at large. Second, the practicability of the tent in an unfavorable climate. Third, that the unreasonable hostility to the location of these institutions in populous centers can be successfully combated. Fourth, the advantage of scientific feeding.

No fact in medicine is better established than that climate *per se* is an unimportant factor in the treatment of pulmonary tuberculosis, and the success of the Ottawa Tent Colony is only another object lesson which goes to prove the futility of the claim that change of climate is necessary for a cure in tuberculosis.

THE OPERATIVE TREATMENT OF DISCHARGES FROM THE EAR.*

A. E. PRINCE, M.D.

SPRINGFIELD.

In offering a paper on the "Surgical Treatment of Chronic Suppuration of the Middle Ear," I have but one conception, viz., to impress on your minds, as general practitioners, the attitude on this subject universally accepted by the otologist, which is rapidly disseminating itself through the ranks of the medical profession. I do not consider the Illinois State Medical Society the place for details of technique, reports of cases or original contributions, and I hope to escape censure if I leave this part of the subject untouched. We all look forward with interest to the meeting of the Section of the American Medical Association in Boston and the Academy of Ophthalmology and Oto-Laryngology in Detroit, when details will be fully considered, which are of least interest to the general surgeon, but will be of much interest to those of us who limit our practice to this field.

I know that many medical men often consider it time wasted to listen to a technical paper on a specialty, but no excuse need be here offered, after calling to mind the fact that 90 per cent. of the cases of septic meningitis are due to suppurative otitis, that 4,000 otitic brain abscesses occur in the United States every year, and that nearly all the cases of thrombosis of the lateral sinus are due to mastoid necrosis. This constitutes a story which should be repeated until it is current knowledge in the mind of every general practitioner.

* Read before the Surgical Section of the Illinois State Medical Society, at Springfield, May 15-17, 1906.

IDENTITY OF MASTOID ABSCESS WITH CHRONIC SUPPURATION OF THE
MIDDLE EAR.

The conception of a mastoid abscess which was formerly entertained was that of an acute inflammation with swelling, redness and fever, which is infrequent in comparison with the chronic discharge from the mastoid cells, due to infection or necrosis. The appearance of pus in the meatus indicates a perforation of the tympanum. A perforation of the tympanum indicates a suppuration in the middle ear. Suppuration of the middle ear means infection of the tympanic cavity and mastoid cells. They are inseparable, and a suppurative process in one usually means an infection in the other. The aditus ad antrum is a short canal furnishing free communication between the tympanum and the antrum of the mastoid, and it is difficult to conceive of a suppuration in the tympanum without involvement of the mastoid and *vice versa*. This is true in acute middle ear infections which usually recover by Nature's effort, as well as the necrotic type which rarely heals spontaneously.

Our minds have been kept in a state of inertia regarding the true import of this relationship by the marvelous *vis medicatrix naturæ*, which is ever asserting itself and saving the physician from disgrace. Nature has been curing so large a proportion of the acute cases that we fail to recognize them as mastoid abscesses until in her struggles she forced upon us symptoms which we could not mistake. When she digested the dead bone, absorbed the cortex, followed the line of least resistance, producing swelling and tenderness over the mastoid, then we inferred it was a mastoid abscess. When she had penetrated the bone and produced a fluctuating subperiosteal abscess, all doubts were removed. But not always even then, for only recently a case was sent to me by one of the good physicians of the country on account of an abscess involving the cheek, temporal region and mastoid field, without a clear diagnosis of the cause. The pus had burrowed under the periosteum, covering the squamous portion of the temporal bone and the parietal and frontal bones up to the temporal ridge. The abscess extended forward, penetrated the periosteum and made an opening for its escape through the conjunctiva under the upper lid. I opened at once down on the mastoid, forward over the ear and downward into the cheek. A mastoid operation was done, subperiosteal drainage was attempted, which failed on account of the septic character of the fistulous tract which was lined with unhealthy granulations, which could not be successfully reached by curettement. Accordingly, the tract was laid open, revealing a large area of exposed bone. This rapidly became covered by granulations and eventually healed. As there is probably no case on record of a mastoid abscess discharging through the conjunctiva of the upper lid, I had a photograph taken near the close of the healing, which conveys a feeble idea of the surface involved.

In case of a swelling of the neck near the mastoid tip, never forget the possibility of a mastoid abscess. The tip of the mastoid contains cells which are prone to infection. Perforation takes place in the digastric fossa, and the pus follows the course of the digastric or sternocleido mas-

toid muscle (Bezod type). Such an abscess may extend to the sternum with baleful results, unless promptly opened and drained. Should pus develop over the mastoid, do not be satisfied with a Wilde's incision, but open the mastoid and secure the best possible drainage. In a recent case the consulting surgeon was inclined to be satisfied with a free opening which revealed a spontaneous perforation. Upon further exploration, it was found that the bone overlying the sigmoid sinus was necrosed, and the sinus covered with granulation tissue. Nature was doing her best to protect, was digesting the necrosed bone, and had made an opening for the escape of the pus. After many months a recovery might have taken place, but who knows whether the odds would have been with or against Nature?

The most dangerous type of cases is that in which the cortex is dense and the aditus ad antrum is narrow. In these cases the pain is likely to be severe and referred to the temporal region with absence of superficial symptoms. Unless recognized early, the pressure is likely to force an opening through the tegmen of the antrum. On account of the great danger attending delay, one is justified in making an exploratory incision leading directly to the antrum.

PAINFUL SUPPURATION.

Painful suppuration is indicative of defective draining, either from one cell to another or of an obstructed outlet through the aditus ad antrum. This indicates increased pressure, and, unless relieved, may result in penetration of the tegmen. In these cases an opening is imperative.

FOUL SUPPURATION.

Foul suppuration means saprophytic decomposition, and, although exceedingly disagreeable, may be accompanied by a free outlet, and hence is less dangerous. Often the coverings of the sigmoid sinus and middle cranial fossa are fortified by the prolonged inflammatory process. The condition may endure for life. In other cases an extension of necrosis develops, when a sense of greatest security is entertained. Profuse suppuration often indicates a dangerous condition due to possible extension of the inflammatory process, and is just cause for anxiety. It may be without pain or odor or fever, and yet may indicate an extension into the cranial cavity.

Remember that the tympanic cavity is small, its capacity being five minims. These mastoid cells may multiply the suppurative area several times. A subdural abscess may exist with a free outlet into the mastoid cells and may still further increase the possibility of discharge. If one has a suppurating ear, which completely fills the meatus at frequent intervals, he should contemplate the possibility of the latter condition.

This condition may be illustrated by a case recently seen in Danville, Illinois, with Dr. Gleeson. Free suppuration without pain, odor or fever had not abated for ten weeks. The man was working daily on street car service. I advised a mastoid exploration, which revealed an extradural abscess and an exposed lateral tissue through three-fourths of an inch of

its course. Good drainage was established through the meatus, and the wound back of the ear closed immediately. Recovery was quick and uneventful.

Here permit me to exhibit some specimens prepared at my request by Mr. Burchell, of New York, which are so cut as to give a very clear conception of the danger attending a chronic inflammatory process of the temporal bone. They are for sale.

PRELIMINARY TREATMENT.

Although the results of medical treatment are not encouraging in chronic cases, yet so frequently do they yield without surgical intervention in cases where we least expect improvement that, before deciding upon an operation, when delay is not regarded perilous, I recommend the following treatment: First, use dioxygen to clear out the pus; second, insert into the meatus ten drops of a 5 per cent. glycerin solution of boric acid and salicylic acid. Churn so as to force the solution into the tympanum. In many cases the solution finds its way into the antrum of the mastoid, and often cases of chronic offensive discharges are cured when we least expect it.

It is hydropic and antiseptic, and can be placed in the hands of the patient. The specialist may pack the ear daily with gauze. He may irrigate the epitympanum, curette the tympanic cavity and get results in some cases, as Hotz has pointed out, but by the general practitioner these remedies will not be successfully employed. Such good results have been obtained from the above method that I ask a fair trial of the remedy before deciding on a surgical course in cases which are not imperative.

The surgical pendulum is now swinging in the right direction. The medical and the lay public have become educated regarding what to expect. The surgeon is more careful of his diagnosis and is wiser in recommendations. The public demands a cure. The back-number surgeon who temporized and failed to assist Nature in her efforts to rid the ear of an odious, offensive discharge is disappearing. It is but a few years since the expectant plan would work, but that day has passed. Then the patient knew no better and put up with a chronic, painful, discharging ear, because the physician was ignorant of the possibilities of a cure. Now all is different. Stacke laid the corner-stone and, with Schwattze, built the temple which will immortalize those names. Later improvements were made, notably that of immediately closing the opening back of the ear and draining through the meatus, thus eliminating the most disagreeable element, that of a protracted suppuration through an external opening in the skin. It is for us to learn the lesson and apply it. Each case demands a careful analysis and the exercise of the best judgment to determine the wise and middle ground between conservative medical treatment and radical surgical intervention.

In the New York Eye and Ear Infirmary, a smear is examined in every case and the nature of the micro-organism is ascertained. The streptococcus demands early attention. The pneumococcus and staphylococcus are regarded as less urgent. When the cause is scarlatina, it is more likely to be intractable than when due to a mild infection, such as

measles. Pain or cerebral symptoms or high temperature are important guides to an early operation.

LEUCOCYTOSIS.

Increased leucocytosis is not apparent in chronic suppuration of the ear, except in case of extensive invasion of the soft tissues or cranial cavity.

LUMBAR PUNCTURE.

A most valuable aid, and one which is insufficiently recognized, to guide us in making a decision regarding the probability of an extension of the inflammation to the meninges is lumbar puncture. We are indebted to reports of Drs. Chavasse and Mahon for exhaustive work on this subject in its relation to inflammatory extension from the ear. So valuable are his views that I append an abridgement of his conclusions.

1. Lumbar puncture for the examination of the cephalo-arachnoid fluid for color, bacteriology and cytology is a reliable means of diagnosis of endocranial complication of the ears. Done without aspiration, and with the patient lying down, it is nearly always harmless.

2. If the liquid is clear, and after centrifugation no bacteria or polynuclear leucocytes are found, the negative diagnosis of bacterial meningitis is assured.

3. A cloudy liquid, with increased tension and quantity, containing pyogenic bacteria, indicates pyogenic meningitis, and is an early symptom.

The value of these conclusions was brought to my mind a short time ago by a case of mastoid necrosis, on which an operation was contemplated. We were forced to a prompt conclusion by the sudden development of pain, swelling and nausea, vomiting and a rising temperature, initiated by a chill. Before deciding upon an operation for a supposed meningitis a lumbar puncture was made by Dr. Monroe, which revealed the fluid to be normal in quantity; absence of tension, normal color and constitution. On this was based a diagnosis of extracranial inflammation, which, after a few hours, developed into an unmistakable facial erysipelas. Had I operated, she probably would have died. Lumbar puncture probably saved the patient and my reputation. It also increases the confidence of the community in correct diagnosis, every mistake in which tends to destroy confidence in surgery, as well as the surgeon.

PROGNOSIS.

The prognosis in surgery of suppurating ears is good, provided the surgeon knows his anatomy and applies intelligent technique. Ignorance of anatomy begets timidity and results in leaving infected cells, which may, after the wound is healed, suppurate and enter the cranial cavity. Egotism begets recklessness and encourages the operator to overstep the mark and encroach on the vital structures without weighing the costs. The operator must know the anomalous position of the antrum sigmoid groove and various conditions of the temporal bone. He must not judge the difficulties of a radical operation by the simplicity of an acute mastoid in which Nature has already effected a cure. In the radical opera-

tion for chronic suppuration, we are obliged to find the necrosed spots and eradicate them. This requires a knowledge learned only by painstaking study, dissection and experience. The operator must know his anatomy in the dark. The field is bathed in blood; he must remove the cortex and all the cells down to the inner table, when he is within a millimeter of the dura mater, and yet he must not injure the horizontal semi-circular canal, the lateral sinus, the cochlea, fenestra ovale or rotundo, the facial nerve or the carotid artery.

My earlier experience was that of anxiety; my later that of confidence. When one is uncertain whether he gets all of the diseased tissue he fears the result. When he knows he has done a good operation he counts on an uneventful recovery. In a small percentage in which the arachnoid has been involved or manifests itself in the form of cerebral or cerebellar abscess or sinus thrombosis, death may result in spite of every effort. But no department of conservative surgery is making more progress in the confidence of careful operators and the thoughtful members of the profession than this radical operation for suppurating middle ears.

THE LOGIC OF ABDOMINAL PAIN.*

J. L. WIGGINS, M.D.

EAST ST. LOUIS.

It would seem to the casual observer that the territory represented by the abdominal and pelvic cavities and the comparatively few organs contained therein, which ordinarily are subject to acute inflammatory disease, the location of each in health varying but slightly from relative fixed position, their function being known, and the symptoms incident to pathological conditions to which they are severally liable, would be understood by the careful investigator and the symptoms recorded so concisely that the individual who only occasionally comes in contact with these lesions would have little difficulty in recognizing them. Theoretically, this is true. Practically, it is not. When we speak of a diagnosis as applying to diseased abdominal organs, it does not apply to an ultimate diagnosis so much as to a primary one. As an illustration, after an appendicular abscess has formed, self-evident by sight or touch, or after a malignant growth of the stomach has reached a stage of development where its form can be outlined and the so-called cachexia is in evidence, or when after a long period of illness a fistula appears from which are discharged biliary calculi, it requires no especial knowledge on the part of the physician to make a diagnosis, and, so far as the benefits accruing therefrom are concerned, the diagnosis might as well not be made.

Throughout the ages the cry has been for more light. Ofttimes to the student the question is presented, Are we in need of greater knowledge or are we slothful in intelligently applying that which we possess? Every ailment which flesh is heir to has a language peculiarly its own. Usually

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it is pain, pitched to a higher or lower key, but indicative of the chord touched and the strength of the touch. It is not that pain language is so difficult to master or uncertain in its expression as it is our own incompetence in its interpretation. Each year of our present progress proves the correctness of this assertion as we see the number diminish in that great army of so-called neurotics, doubly punished, first, in their bodily pains and, second, by the mental torture in being discredited by those from whom they seek relief.

The object in the study of abdominal pain is for the purpose of making an early and exact diagnosis. Upon these grounds only can we presume a rational treatment. Let me emphasize here that a rational treatment does not always indicate the use of a knife. It is not intended to convey the idea that in every case the hand should be stayed until an exact diagnosis is made. If so governed, we would again enter the jungle of uncertainty from which we have just emerged. But when exactness is not attainable, which condition arises in the series of so-called border cases, it is within our province to conclude an involvement of a certain organ or of its neighboring organ, or perhaps both. This is a diagnosis based upon probabilities, and forms, when conscientiously executed, a legitimate basis for exploratory incision. It were well if the proper status of the exploratory incision could be fixed within some reasonable bounds. As now existing and applied by the leading operators it requires no apology. Advantage is taken by many, who are lax in their efforts in analyzing symptoms or eliciting histories, as an excuse for ill-advised operations. This is unfortunate; for it may be assumed that a man who is incompetent to form a fair conception of conditions, which are likely to be met previous to opening the abdomen, will not be able to properly dispose of them after they are found; or, failing to find pathologic conditions, will remove necessary healthy organs.

Assuming that primarily none are endowed with the power of discerning what organs are affected or to what degree, it is well to inquire as to the necessary equipment of the surgeon or diagnostician. Should his education and practice be confined within the narrow limits of one cavity or circumscribed field? We think not. The rule is that one who expects to know much about one subject must know something about many. One who essays to pose as an operator must possess not only a deftness in operative work, but must also be a skilled diagnostician. We can reconcile the latter without the former, but the rule is not reversible; the basis for either is the same. A mastery of the fundamentals, thus equipped, there still remains the acquirement of the sixth sense; the ability to pick up some obscure, attenuated symptomatic thread and follow it. This brings us, logically, to a consideration of the various means by which conclusions are reached. Naturally, the one symptom for which relief is sought becomes paramount. This, as a rule, is pain. Where this can be analyzed in its incipiency, unvexed by strenuous, misapplied efforts or soothed by opiates, it will furnish us data sufficiently accurate upon which to base a correct opinion. Unfortunately, in many instances, the ideal is not attainable. Lesions which were primarily localized have extended, or may

have become general and the patient's mind is burdened, not with the first pain impressions, but with the latest. While nearly 80 per cent. of our abdominal work is done for pathologic conditions involving organs situated on the right of the median line, and while this territory, being under suspicion, claims our first attention, it is well to remember that pain, dependent upon certain laws for its expression, may, by reason of malposition of an organ through arrested development, adhesions, intrusion upon the territory of a neighboring organ, nerve pressure, etc., become misspelled, and is thus projected to a point, near or remote, which is entirely free from disease. Contrariwise, pain may be in complete abeyance, notwithstanding extensive and vital involvement. As an illustration of the former condition, we may refer to involvement of the right lower intercostals in pleuritic inflammation, when the pain through the eleventh and twelfth intercostal nerves is projected to the appendicular pain center. A like condition occasionally occurs in Pott's disease. The writer has also noted cases previous to vesicication in herpes zoster. An obscure and intractable case of sciatica, which occurred in my practice, which had baffled diagnosis and the usual treatment, was clearly traceable to an attack of appendicitis, which occurred in infancy, with recurring attacks of a catarrhal nature. Investigation showed inflammatory bands, binding the appendix firmly across the sacro-lumbar cord.

To prove that the latter condition, or absence of pain, in many instances is fraught with grave consequences, under certain conditions, we have only to call attention to that type of peritonitis known as deaf and dumb; or the equally hopeless postpartum state of septic phlebitis, to which disease is attached much that was discreditable in former hysterectomies.

Fortunately, pain misspelled is the exception and not the rule, and by it we are able to recognize certain points which speak plainly when properly interrogated. Age, sex, vocation and environments furnish valuable data; while personal and family history oftentimes turn doubt to a certainty. In interpreting plain language relative to age, we are aided by the knowledge that certain organs are more susceptible to involvement of a known kind during a specified period in life. This may be due to normal evolution, lax attachments, entrance upon functional activity or its decadence. Thus, in an infant suffering from a severe abdominal pain, we would suspect intussusception; while, if the patient was nearing the climacteric, malignancy, gallstones or intestinal obstruction would be suggested. In like manner, if between the age of 10 to 30 in the male, the appendix would be under suspicion; while if a female, and anemic, a gastric ulcer; if slender, prolapsed kidney; or, according to age and social condition, the involvement of the uterine adnexa. Vocations requiring use of certain minerals suggest their toxic effects, as do those callings wherein sudden, violent abdominal muscular strain indicate possibility of hernia. Personal and family history can not be too carefully weighed. While an enlightened understanding does not burden humanity with diseases supposedly transmitted from our ancestry to as great an extent in the present as in the past, yet, in many instances, we are able to trace a

coincidence of similar affections savoring of direct inheritance. Personal history is not in like manner hedged with doubt. Age, sex and vocation being considered, we are concerned as to the manner and time of invasion and the supposed exciting cause. Did it follow dietetic excesses, exposure, or was it the result of trauma? Is it a chance acquaintance or an old friend? If the latter, are the attacks frequent, are they severe and is the patient free from annoyance in the interim? The character of pain must be considered, whether sharp and lancinating or dull and throbbing; or occupying the varied degrees of intensity between slight discomfort or threatened dissolution. What is its effect upon the gastrointestinal tract? Is there a direct involvement of the structures or is it caused by the sympathetic reflexes? Is it associated with and a possible sequence of existing disease or is it dependent upon conditions affecting individual organs alone? We are aided in our consideration by the fact that certain effects follow closely upon certain causes; and that, knowing the structure and function of an organ and its danger from known causes, we are guided to conclusions. There could be no uncertainty as to whether pain resulted from a perforation of the appendix or from a ruptured tubal pregnancy; one being followed by temporary relief from existing pain unaccompanied by shock, the other heralded by inordinate pain and collapse. A perforating gastric ulcer usually causes greater shock and exsanguination than a perforated gall bladder; and a twisted ureter causes greater local and reflex disturbances than the twisting of the pedicle of an ovarian cyst. Not alone the degree of pain, but its location must be considered. Logically, we assume that an organ occupying a position to which pain is referred, accentuated by pressure, is the organ involved. These areas are known as pain centers, to which the name of the organ normally occupying that position is prefixed. This further restricts diagnosis to circumscribed limits, and, by a diligent search through different avenues at our command, enables us to eliminate other uncertainties. The ease with which the pelvic organs in the female can be palpated would leave no doubt as to whether they or the gall bladder was at fault and would entail little difficulty in discriminating between uterine adnexa and a kidney of surgical interest, and, in the earlier stages, would help us to differentiate between ovarian or appendicular trouble. A urethral searcher or the x-ray confirms or eliminates doubts as to the presence of a calculi. The catheter or sound conveys valuable information relative to the conditions existing in the urinary bladder.

One of the fallacies, general among the laity and altogether too prevalent among physicians, is that the summoning of the surgeon presumes an operation. Another equally vicious idea is that an operation is expedient only as a last resort. Considering the frequency in which these errors govern, the surprise is not that surgery falls short of perfection, but that it is not altogether discredited. When we consider the safety and simplicity of an operation when a disease is in its incipency and confined within the lumen of a dispensable organ, and then contemplate the rapid change incident to escape of infectious material and consequent local or general peritonitis, we feel that the surgeon may be absolved from the

charge of excessive zeal in his endeavor to impress upon the general profession the vital importance of an early and exact diagnosis, supplemented by an immediate operation, whenever an operation is indicated.

11½ North Main Street.

DISCUSSION.

Dr. Robert Gillmore, of Chicago:—I would like to say with regard to the location of abdominal pain that there are certain cases in which pain is referred to unusual locations. In one case under my care, that had been previously operated on for appendicitis without removal of the appendix, I was misled in my diagnosis by the patient referring all his pain to the left costal arch. There was no pain felt at the site of the appendix. A diagnosis of typhoid fever was made, which was confirmed by a partial Widal reaction and agreed to by my consultant. Owing to a suspicious symptom of uncontrollable vomiting, I decided to do an exploratory laparotomy the following day, and a distinct abscess was found on the right side at the appendiceal site. It was opened and drained and the patient made an uninterrupted recovery. Besides having pain referred to the left costal arch in appendicitis, we frequently have the pain referred to the umbilical region.

I would also like to emphasize the point the essayist brought out in regard to the cessation of pain when we have a rupture of the appendix. Quite frequently, in following a case of appendicitis where the pain is quite severe, there may be a cessation of pain. I have recently had a case of that kind. The patient was having a recurrent appendicitis. I was called about forty-eight hours after the attack on account of a severe pain in the abdomen. On reaching the patient the pain had subsided. Although the leucocyte count was low (12,000), I thought there must have been a rupture of the appendix and advised operation, which demonstrated a gangrenous ruptured appendix at the distal end, with a small amount of pus in a little pocket in the peritoneal cavity. The appendix was removed. The patient died on the third day of uremia. Postmortem examination demonstrated an acute nephritis, with blood in the pelvis of the right kidney.

The significance of postural pain is of considerable importance, especially in cases of gallstones. Often patients are unable to lie on the left side on account of pain. They obtain greater comfort in lying on the right side rather than on the back. I would also like to call attention to the character of pain in female diseases where there is a lacerated and relaxed perineum and prolapse of the uterus. The pain is increased on standing and walking, and is worse at the end of the day than at the beginning. This pain is relieved on lying down. When the woman gets up in the morning she feels comfortable, well and vigorous, while at night she has a severe backache.

Dr. Edward H. Ochsner, of Chicago:—The essayist has opened up an interesting field for discussion. I would like to call attention to one or two points. First, that patients with pain in the abdominal region must be examined carefully. It is rather late in the day to make that statement, yet I dare say that one-half of the patients that come to consult us on account of abdominal pain are not stripped and the abdomen is not examined. The first thing, therefore, is to make a careful examination of the abdomen. Second, pain alone is almost useless in determining the location of disease. It is of value in addition to other things, but as a single symptom it is almost valueless, because abscesses of the appendix may cause pain anywhere in the abdomen. And so with all organs of the abdomen. Only in conjunction with other symptoms is it of value.

Dr. John E. Allaben, of Rockford:—I desire to speak with reference to pain in children. Dr. Herrick of Chicago, some time ago contributed an excellent article upon this subject, calling attention to the pain of pneumonia being referred to the abdominal region, particularly the region of the appendix. This was demonstrated by a case I had some time ago. I was called to a neighboring town with instructions to come prepared to operate on a child for appendicitis. When I examined the case I was in doubt. It is difficult to examine and diagnose abdominal diseases in children. In this case the pain was in the appendicular

region, but I concluded that the disease would prove to be lung trouble and recommended postponement of operative procedures. By the next morning the child had developed a well-defined right-sided capillary pneumonia and the abdominal pain had entirely disappeared.

Dr. Frederick A. Leusman, of Chicago:—A doctor in Chicago made a diagnosis of appendicitis in a child 6 or 7 years old, and he set a day for the operation, which was the next morning. He asked me to assist him in doing this operation. In the evening of the day before the supposed operation another physician, one of the leading internists in Chicago, a professor in Rush Medical College, one of the attending staff of the Cook County Hospital and a gentleman of wide learning and experience, was called, examined the child, called me up over the telephone at the request of the attending physician who was going to operate, and said: "I think the case is one of pneumonia; I will not be responsible for operation in that case." I replied: "My dear doctor, I have not seen the child. I am depending on the man who saw the case, and, knowing that the diagnosis of appendicitis can not be made absolutely by anybody, I was willing to operate; but if you say not, then, of course, we will let it go." Two days later the first doctor informed me the child was dead and had died of appendicitis, with the abdomen in the shape of a balloon.

Dr. Wiggins (closing the discussion):—The responsibilities of an early diagnosis can not be overestimated. To be able to form reasonable conclusions as to the parts involved and the necessity of surgical interference one must, in many instances, exhaust every means which present-day investigation and free interchange of experience of men in like work has placed at our disposal. While in many instances the other fellow is to blame for making diagnosis more difficult, we are forced to admit the most just criticism in the majority of our failures is a lack of thoroughness in our examination. Pain is in most instances the danger signal that attracts attention and guides to conclusions, but it is not to be presumed that we should permit this one symptom to mislead and ignore other means of verification.

THE TREATMENT OF OBESITY AND ITS COMPLICATIONS.*

ALFRED C. CROFTAN, M.D.

CHICAGO.

(Author's Abstract.)

An overgrowth of fatty tissue, as a rule, produces disorders in different organs that call for treatment. It will be found that the reduction of the fat often suffices to remove distressing complications that do not otherwise yield to simple symptomatic treatment. We see analogous conditions in other disorders that are allied to obesity, notably in diabetes and the so-called uric acid diathesis, for here, too, the reduction of circulating sugar and uric acid and its congeners produces an amelioration or a cure of secondary complications. Attempts to reduce obesity, therefore, in many instances, acquire the dignity of causal treatment and become much more than a concession to the vanity of fleshy females.

COMPLICATIONS OF OBESITY.

The organs most frequently and most seriously affected are the heart and arteries, the bronchi, the digestive apparatus, the nervous system and the skin.

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THE CARDIO-VASCULAR APPARATUS.

Upon the heart is always thrown an enormous amount of excessive labor; first, because the body is heavier and locomotion requires more labor; second, because a much larger vascular area than in a normal subject must be supplied, owing to the intricate labyrinth of new blood vessels that form in the adipose tissue; third, because the development of fat in the mediastinum and around and within the pericardium exercises mechanical pressure upon the heart and, hence, interferes with its action; fourth, because fatty degeneration of the vessel walls very often occurs, with loss of their elasticity and, consequently, an increased strain upon the heart muscle; fifth, because the large masses of abdominal fat seriously interfere with the excursions of the diaphragm and, hence, produce a general embarrassment of the venous circulation; lastly, because, either as a result of all this overstrain or as a part of the phenomenon of general obesity, fatty infiltration or fatty degeneration of the heart muscle itself occurs.

As a matter of fact, the affection of the heart is probably the most serious consequence of obesity, for most obese subjects suffer from the heart and die from heart failure. If, moreover, they should become affected with some intercurrent infectious disease, as pneumonia, typhoid fever or tuberculosis, then the resisting powers of the heart are so slight in these cases that death commonly occurs from cardiac weakness. The involvement of the heart in obesity leads to the closing of a vicious circle, for the weak heart action produces an inadequate blood supply to various portions of the body, with insufficient nutrition of muscular tissues and general lassitude; all factors that, in predisposed subjects, favor the development of obesity. On the other hand, as soon as obesity appears, it, in its turn, reacts unfavorably upon the heart.

THE RESPIRATORY APPARATUS.

About the respiratory apparatus, serious disorders are also very common. The fat in the mediastinum and the increased weight of the chest walls, the impediment to the downward excursions of the diaphragm that is created by the overgrowth of abdominal fat, all seriously interfere with the inflation of the lungs and the ventilation of the thorax. As a result, rapid breathing, especially on exertion, dyspnea, and, above all, chronic bronchial catarrh are very common in obesity. The bronchial catarrh is due, in part also, to the venous stasis that results from the cardiac insufficiency. The mucus is, as a rule, very tough and difficult of expectoration. The patients cough terrifically, usually without much relief, as expulsion of the mucus is rendered difficult by the emphysema, the venous stasis in the lungs and the inability to fully expand the chest, as a preliminary to the coughing effort. This condition, again, imposes a severe strain upon the heart, especially the right heart. The bronchitis in obesity rarely yields to ordinary remedies, but is promptly improved, if the obesity is reduced and the condition of the heart improved. In obesity there is, therefore, also from this source, danger of pulmonary infections, and many of these cases succumb to catarrhal pneumonia and.

above all, to tuberculosis. There is a popular prejudice to the effect that obese subjects are not very susceptible to tuberculosis. If tuberculous infection occurs, however, it usually goes very hard with obese patients, and they constitute a large proportion of the cases of so-called galloping consumption.

THE DIGESTIVE APPARATUS.

The disorders about the digestive apparatus are manifold in character. Most of them are due to the venous stasis that results either directly from the heart weakness or indirectly from portal stasis. The most common intestinal symptoms in obesity are hemorrhoids and constipation, both being almost invariably present. The former are due either to portal stasis or to general interference with the venous backflow into the abdomen; the latter is due to the pressure of the fat masses within the abdomen upon the bowel and interference with their peristaltic action; besides, there is always much difficulty in voluntarily raising the abdominal pressure sufficiently to promote normal defecation. The one-sided diet, with the elimination of much fat and carbohydrate pabulum, may also have something to do with the constipation in obesity.

THE LIVER AND ITS DUCTS.

Fatty infiltration of the liver, combined with stasis and, later, with cirrhosis, is not uncommon. Cholelithiasis and dislocation of the liver are not frequent during the stage of obesity, but frequently follow rapid reduction cures, owing to the fact that the support of the abdominal fat is rapidly withdrawn, and malposition of the liver and bending or knuckling of the gall ducts is thereby produced.

THE SKIN.

About the skin a variety of irritative disorders, complicated by secondary infections, are common. They are due both to the friction of abnormally enlarged, adjacent parts of the body and to the profuse sweating that afflicts most obese subjects. The sweating is attributable presumably to an effort on the part of the organism to get rid of surface heat by water evaporation from the skin, especially as normal radiation is interfered with on account of the thick adipose layer that conducts heat so badly. These obese subjects frequently suffer from intertrigo, eczema, furunculosis, carbuncles and sudamina; besides, the skin often becomes torn in its lower layers, thus leading to the formation of striæ, while, at the same time, capillary hemorrhages and venous ectases are frequent, and varicose veins in various parts of the body make their appearance.

THE NERVOUS SYSTEM.

About the nervous system, finally, a great variety of functional disorders, many of them of the neurasthenic type, are common. Most of them are due to the inadequate blood supply to the brain that results from the heart weakness. Apathy and a phlegmatic temperament are notoriously common in obesity. These psychic attributes, combined, as they commonly are, with what is popularly interpreted as a good-natured

disposition, are presumably a result of the bulk of the individual; for, with the difficulty of moving about freely and the inability of speedily carrying the dictates of an ever so energetic will into rapid execution, habits of listlessness, laziness and indifference are easily engendered; consequently, after a time, the bodily condition becomes reflected in the temperament, rather than *vice versa*. More serious manifestations about the nervous system are cerebrospinal apoplexies, which are not uncommon, especially in cases with weak hearts and arteriosclerotic arteries, suffering from various conditions as bronchitis, constipation, etc., which call for violent straining efforts.

CHRONIC ARTHRITIS.

The importance of reducing obesity in a variety of chronic joint disorders may finally be mentioned; for here the reduction of the bulk of the patient by relieving the joints of the labor required to support a large mass acts in the same way as a mechanical support. Thus, the reduction of obesity is a particularly grateful procedure in chronic rheumatism and gouty forms of arthritis.

METHODS OF REDUCTION CURES.

The methods at our disposal for reducing obesity are chiefly dietetic. Second in importance is the regulation of the muscular exercise. These two means, singly or combined, usually suffice to accomplish the desired purpose, for, with a decrease of the intake of fat-forming pabulum and an increase of its destruction by exercise, the fat content of the body must needs dwindle. These measures may to advantage be enforced by certain hydrotherapeutic and medicinal means, the latter finding their chief sphere of application, however, in the symptomatic treatment of the complications of obesity.

THE THREE DEGREES OF OBESITY.

One can conveniently distinguish three degrees of obesity that have been aptly characterized by a German writer as the enviable, the comical and the pitiable stage, the first presenting itself as a pleasing rotundity, the second as a jovial embonpoint of the Falstaff type, the third as a sad, unwieldy and, to our Caucasian tastes, disgusting deformity. Each of these three forms requires particular treatment. In the first form, no attempt need be made to reduce the amount of fat, but every effort should be put forward to prevent its further development, particularly if premonitory signs of complications about the thoracic or abdominal organs begin to make their appearance. In the second and third forms, however, it becomes necessary to institute more or less energetic restrictions, with the object in view of causing a loss of fat.

THE QUALITY OF THE FOOD.

The laity and many physicians to this day direct their attention chiefly to the quality or the preparation of the food in reducing obesity. Certain articles are said to form fat and others not. This idea is erro-

neous. Broadly speaking, carbohydrate and fat foods should be reduced, and not the albumins. This rule is to be observed, not because albumin forms less fat than carbohydrates or fats, but because the reduction of the albumins below certain normal average requirements is a dangerous and precarious procedure, whereas the fats and carbohydrates can be much reduced without much detriment to the individual.

THE CALORIC VALUE OF THE FOOD.

One may say, broadly and with certain reservations, that any article of food can form fat, according to its caloric value; that the introduction of more calories, either in the form of albumins or fats or of carbohydrates, than are required to maintain normal nutritive equilibrium may lead to the deposit of fat in the tissues, whereas the introduction of less calories leads the organism to promptly attack chiefly its fat reserve to make up the caloric deficit.¹ The diet in obesity should, therefore, be arranged mathematically. The normal caloric requirements of the individual must be calculated from his height and weight with the aid of certain tables, the caloric value of the different foods must be known and only so many calories should be introduced with the food that under-nutrition, mild, medium or severe, takes place.¹

THE LIQUID INTAKE.

At the same time, the liquid intake must be regulated, restriction of liquids being essential in some cases, superfluous in others, dangerous in still others; according to the degree of obesity, the rapidity with which a reduction cure is to be brought about and the condition of the cardiovascular, gastro-intestinal and renal apparatus.

MINERAL WATERS.

The use of mineral waters is common in the reduction of obesity. Kissingen, Vichy, Carlsbad, Nauheim, Mariensbad, etc., enjoy deserved popularity as "fat cures." It is a futile task, however, to attempt the reduction of obesity by the use of these waters alone. It is possible, of course, by producing profuse watery diarrhea with the aid of these waters, to cause a considerable loss of water from the tissues, and hence a reduction in the weight of the patient. This practice is of some use for psychologic reasons, because the rapid loss of weight in the beginning of the treatment makes a great impression upon the patient and renders him more willing to follow directions later on. The indiscriminate use of mineral waters is, however, to be condemned; for, if the diarrhea is allowed to persist too long, the effect is, without doubt, weakening, and this practice, moreover, especially in obesity, reacts unfavorably upon the blood pressure and the heart.

RESORT TREATMENT.

These patients, it is true, do very well, as a rule, in resorts in which these waters are taken, but the effects are to be attributed only in a very

1. The technic of the "Science of Reduction Cures" is discussed in full in my recent article on "The Dietetics of Obesity," *Journal A. M. A.*, from which some of the above paragraphs are quoted.

small part to the drinking of the particular water (witness the indifferent effects obtained from the use of these waters or salts at home) and in much greater part to the careful and strict regulations in regard to exercise, general mode of life and diet that the patients undergo much more willingly and conscientiously at a watering place than at home. Fully as useful, probably safer, and by all means cheaper, is the treatment of obesity in an institution where a like control can be exercised over the patient's diet and habits.

TERRAIN CURES.

In Nauheim and certain other watering places, the Oertel Terrain cure is given, by instructing the patients to slowly climb a series of paths that are elevated at an angle of from 0 to 20 degrees; at the same time certain other factors are carefully considered, and, as the heart's action improves and the fat is lost, more exercise is allowed each day. In this way it is possible to carefully grade the exercises and to obtain remarkably good results from this practice.

EXERCISE AND MASSAGE.

Other exercises, besides walking on a level or hill climbing, are bicycle riding, rowing and a number of light out-of-door games. Rowing is especially useful, for the amount of exercise can be carefully regulated, while, at the same time, full expansion of the lungs with improved oxygenation is promoted. In winter, rowing machines fulfill a very useful purpose. Horseback riding enjoys a very good reputation as a means of reducing obesity. This, as a German writer states, is deserved, as far as the horse is concerned, but not the rider. Horseback riding stimulates the appetite more than other exercise, without leading to any reduction of the body fat. Massage is of no value whatsoever in the treatment of obesity. It has been shown by very careful metabolic studies that long-continued massage of the whole body exercises no greater influence upon metabolism than opening and shutting one hand energetically a few times.

HYDROTHERAPY.

Hydrotherapeutic measures are useful for several reasons. Cold baths, especially when combined with friction, cause a considerable loss of heat from the surfaces of the body and hence stimulate the organism to increased heat production with consumption of body fat. Hot baths act chiefly on account of their diaphoretic action and are synonymous in their effect with any other sweating procedure. The condition of the nervous system, of the circulatory apparatus, of the bronchi and of the skin must always be carefully considered when advising the use of hydrotherapeutic means, and the same counter indications to their employment in obesity exist as in any other case of cardio-vascular, renal or respiratory disease.

THYROID THERAPY.

The medicamentous treatment of obesity is of very subordinate importance. The complications occasionally call for drugs, but for the re-

duction of obesity only one remedy can be effectively employed, namely, thyroid gland preparations. The use of thyroid in obesity at one time was very popular, and this remedy has been carefully tested for several years. Its effects are always uncertain, some obese subjects reacting to the administration of the drug by a rapid, sometimes almost alarming, loss of flesh, others not reacting at all. The effect of the drug, moreover, is not permanent; for as soon as its use is discontinued the patients rapidly regain the lost fat; besides, it is not without danger, especially when used indiscriminately by the laity; for the syndrome of thyroidism, manifesting itself in a variety of disagreeable symptoms about the nervous system and the circulatory apparatus, is always to be dreaded. Cases are on record, moreover, in which the use of large doses of thyroid extract produced glycosuria. In view of the fact that there is an intimate pathogenic relationship between obesity and diabetes, this is particularly to be feared; for occasionally it seems that a true diabetes mellitus was precipitated by the use of thyroid extract. Generally speaking, the use of the drug is superfluous, because obesity can always be reduced if the dietetic regulations discussed in the preceding paragraphs are conscientiously carried out. The only real benefit that might occasionally accrue from the use of thyroid would be to produce a rapid loss of flesh in the beginning of a reduction cure and in this way to exercise a strong suggestive effect upon the patient, thus giving him confidence in the efficacy of the measures employed for his relief; but even this suggestive effect can, in most cases, be equally well produced by the restriction of water drinking or by energetic sweating without, at the same time, doing the patient any harm.

100 State Street.

DISCUSSION.

Dr. Arthur R. Elliott, of Chicago:—I have very little to say except in thorough agreement of what the doctor said in his exposition of this subject, a subject which is not, considering its importance from the standpoint of its value in relation to organic disease, sufficiently often brought forward in our meetings. Dr. Croftan spoke of the value of the reduction treatment in the cure of nephritis, of nervous diseases and cardio-vascular disturbances. In my blood-pressure observations I have been able to demonstrate a fact well understood by those who have followed out blood-pressure observations in a routine way: that we observe very much higher blood-pressure readings in those who are obese, as a rule.

In some fifteen nephritics observed in a routine way as regards blood pressure, I have found that the average weight was 186, whereas in those who weighed within the average normal for their height the blood pressure ranged considerably lower than when obesity was present. This has been observed by various observers. Griesbach some time ago published his observations in regard to blood pressure in obese subjects. He made routine examinations and was able to demonstrate polycythemia and actual blood pressure in quite a marked proportion of them. He called these cases of polycythemia hypertonica. The blood pressure in these persons was very high, and a large percentage of cerebral hemorrhages occurred among their number. It is undoubtedly true that in cases showing cardio-vascular changes the element of obesity plays a very important part in the therapy, especially in nephritis.

One of the first considerations in the treatment is to direct attention toward the reduction of excessive flesh. Dr. Croftan very ingeniously reviewed the essential principles in the treatment of obesity. Unfortunately the quantitative dietetic

measures best adapted for the cure of these patients do not at all secure the end desired. Obesity is nothing more than an error of diet. In many cases it might be termed a morbid disposition to lay on fat, and we find such subjects increasing in weight, notwithstanding the fact that the caloric value of the food is low and that the quantity or bulk of the food is also small.

These cases possibly do not offer the same favorable material for quantitative diet and treatment as do cases in which there is excessive hypernutrition.

Dr. M. S. Marcy, of Peoria:—The essayist has certainly given us a very interesting paper, but there is one thing that he lacks: he has never been fat, hence can not speak from personal experience, but only from observation. This is a very serious question for the patient. It is not always a question of how much a person eats. As a rule you will find that persons after they have become obese are much smaller eaters than are the small, slender individuals, who are apt to be good eaters, although they are not taking on fat.

If I were going to advise a patient about the diet, as I do sometimes, I would suggest something else than what Dr. Croftan suggested. He advised giving large quantities of clam broth, which is of no nutritive value, and not to drink water. If you allow a patient to drink all the water he wants before meals he will not eat so much, and then he will not take on so much fat. I know that some people believe that drinking water will make them fat. Many people think that they must eat and drink until the stomach is full. Let those people fill their stomachs with water first and then they will eat less.

The one important thing about it all is graduated exercise. I think you can safely tell a person to eat what he wants, eating moderately, but you must compel that person to take exercise, beginning gradually, increasing it a little every day until you have them walking ten or fifteen miles a day. Follow this exercise with a vigorous rub-down and a cold sponge bath and you will do them a great deal of good. I am firmly convinced that exercise is the keynote to reducing flesh.

Dr. J. H. Hollister, of Chicago:—Not only the quantity of food but the manner of eating is of importance. I think we shall more and more find benefit arising from the manner in which we introduce food into the stomach. It was my privilege some fifty years ago to observe with others Alexander St. Martin, the celebrated case on which Dr. Beaumont made his experiments with reference to nutrition and the methods of introducing food into the stomach. We made experiments on that man for about two weeks. Beaumont's patient was not satisfied sufficiently by the simple introduction of nitrogenous food into the stomach through the artificial orifice, unless afterward there was mixed with it a sufficient quantity of secretion from the glands of the mouth. When we introduced a bit of rubber into the mouth and let him chew that for about five minutes and swallow the salivary secretion, the saliva, when mingling with the food, satisfied him, and we learned that mastication and salivary secretion are the essential means of satisfying hunger rather than the quantity of food. I have emphasized that fact repeatedly when prescribing to my patients. I have urged them to thoroughly masticate and insalivate the food, and then swallow it before introducing any more. They will derive more benefit from their food in that way; they will not require so much food and there is no danger that they will become fat.

Dr. R. W. Webster, of Chicago:—There are two or three points to be mentioned in connection with this paper. The first point is the fact that we have three well-known and tested methods of reducing fat, the first being the lowering of the diet with a normal amount of exercise, the second the increasing of the exercise with the normal diet, and the third being a combination of these two. Dr. Marcy has spoken of the fact that exercise is of importance. It seems to me that in certain cases of obesity exercise can not be used at all. We are all familiar with the fact that obese patients, especially in the later stages of obesity, are very prone to have heart lesions, which means that it is impossible to increase the exercise for the purpose of reducing the flesh.

Dr. Marcy says obese patients are very small eaters. It is just those patients who are small eaters in whom we often find a very close relationship between the carbohydrate and the fat metabolism. Carbohydrates reduce fat, and fat reduces

the carbohydrates in the system. For this reason a close relationship exists between obesity and preliminary diabetes. In three cases that I have observed in the Cook County Hospital, cases of obesity, the diet was very small, yet these patients showed marked glycosuria. Nearly all these patients later manifest typical phases of diabetes. We are all familiar with the lithogenous obesity and the diabetogenous obesity, which were not referred to by Dr. Croftan.

Dr. W. S. Bouton, of Waukegan:—I want to say a few words regarding the use of thyroid extract in the treatment of obesity. Some time ago I was called to a patient who was having rheumatic attacks. There was no valvular disturbance, no irregularity of the pulse, although it was rather weak and rapid. I did not consider the rheumatic attacks as being cardiac in their nature. The patient was very stout. She was of ordinary height, but weighed about 200 pounds. She was very anxious to have her weight reduced. I concluded to try the thyroid extract, and the result was that the woman lost twenty to thirty pounds inside of two weeks. There also was a decided improvement in the rheumatic attacks and in the rheumatoid pains from which she suffered. There was probably some fatty infiltration of the heart, and the heart was relieved by the absorption of the fat. The woman was also very much improved in health. This may be an exceptional case, but the results I obtained were sufficiently good to induce me to use the thyroid extract again in a similar case.

Dr. L. H. Mettler, of Chicago:—I was unfortunate in not hearing the whole of Dr. Croftan's paper, but two remarks he made impressed me very much, because they are in line with my own ideas regarding obesity. He said that the popular belief that these stout patients, as a rule, are the most physically and mentally calm and the most easy-going people, did not fall in with his own observations. I have noted the same thing, and I think it is a mistake to suppose that the nervous system of these people is any more quiet than that of any one else. There is no reason why it should be so. Dr. Elliott made the statement that obesity is the result of something more than a dietetic fault; and, putting all things together, it seems to me that obesity is an affection of a tropho-neurotic character. I would like to inquire whether any one present knows anything in regard to the relationship of general obesity to *adiposis dolorosa*, in which a nervous condition is associated with the excessive putting on of fat; whether they are both due to the same cause or whether the one is in any way dependent upon the other. We know so little about the etiology and pathology of *adiposis dolorosa* that we can not dogmatize on it, but it is interesting to note that this condition, which is so distinct and yet in which these trophic changes run along with a distinct neurotic condition, may have a bearing in bringing us back to the question that putting on of fat in certain individuals is something more than the mere question of food. It may be the neuro-metabolic functions of the body that are concerned.

It has sometimes seemed to me that if some of these stout people who want to get rid of their fat were to exercise their brain and nerve forces more the fat would be reduced to a certain degree. I have noticed this among business men after a long period of close study and mental strain. The neuro-metabolism of such a man has been carried on to such an extent that the man has lost in weight.

Dr. W. C. Abbott, of Chicago:—In this characteristically practical paper Dr. Croftan does not intend to cover all the scientific ground. He merely gives us the practical application of common sense to the treatment of disease. Laying aside all fine-spun theories, the fat man, whether enviably fat or enviably stout, ludicrously stout or beastly so, either eats too much and works too little or else does not digest and assimilate properly what he does eat. Up to that point we can all agree with Dr. Croftan, and that, it seems, is as far as he intended to take us. It is up to us, as reasonably sensible doctors, to make reasonable application of the common-sense theories as they are presented.

Dr. H. C. Fairbrother, of East St. Louis:—There still seems to be nothing new under the sun. I was expecting something new from Dr. Croftan, but it is the old story. In my experience and observation the one problem is that of diet—

limitation of diet. I have tried it myself and I know whereof I speak. I know absolutely that we may diet away our avoirdupois. I admit, nevertheless, that there are some abnormal cases, only a small per cent., however, that take on flesh in spite of a very limited diet. These cases, however, are greatly in the minority, and the average case of too much fat can be relieved by cutting down the diet, cutting off one meal absolutely, and that takes us into the realm of the nervous system. Limiting the power of the senses, living on a higher plane.

Next to the diet is the use of a cathartic. All our horse-trainers understand this perfectly. They do not bring up any scientific theories for the treatment of the jockey, but they reduce his weight by cutting down his diet and giving him plenty of salts. Those are the two things, the *sine qua non*, in the treatment of obesity.

I would like to have Dr. Croftan tell us how he differentiates the so-called physiologic obesity from an incipient pathologic condition.

Dr. Croftan (closing the discussion):—We must appreciate that obesity is not a disease, but a symptom that may be due to a great variety of different causes. I have not made any attempt to enter into the pathogenesis or the etiology of obesity. In most cases it is due to a general metabolic perversion, which may involve only one or two or all three of the classes of foods that constitute our tissues, viz., the albumins, the carbohydrates and the fats. I should like to add to Dr. Webster's classification that there is a metabolic, clinical trinity, consisting of diabetes, obesity, and gout (or the so-called uric-acid diathesis). These conditions are closely correlated and merge into one another. Obese patients often develop diabetes, and diabetic people become fat, and cases of either kind usually exhibit manifestations of the so-called uric-acid diathesis. In the majority of cases of obesity we are undoubtedly dealing with a deep-seated functional perversion of the protoplasm. We do not know, as yet, what this perversion is due to, but that is no reason why we should not attack it symptomatically. We are dealing with the same problem in diabetes. In diabetes the patient excretes sugar. That is a symptom. If we can cut the glycosuria down, the same factors that determine the reduction of the sugar also, as a rule, determine an amelioration of the other symptoms.

Let me call the attention of the surgeons to the surgical aspect of reducing obesity. Many sufferers from joint lesions are obese; here goutiness and obesity are associated about the lower extremities. We try to relieve the joints by means of orthopedic appliances, from pressure, but surely it is a much simpler, more rational and more effective plan to take fat off these people, hence to reduce their weight and hence secure all that could be expected of an artificial support. It is important not to institute too rapid a reduction cure, because the sudden reduction of intra-abdominal fat often leads to hepatoptosis, knuckling of gall ducts, and in many cases, I believe, to the formation of gallstones.

Another very important point, one not recognized enough, is the occasional development of ventral hernia following rapid reduction cure in obesity. Hence peculiar pains appear in the epigastric region that are generally misinterpreted to signify gastric disease. On careful examination a fat hernia will often be found, which again becomes a surgical condition.

I was immensely impressed with Dr. Hollister's remarks. His observation antedates Pawlow by about forty years and corroborates his conclusions that were arrived at by an immense amount of experimental work.

With regard to adiposis dolorosa, I do not think that there is much relation between that condition and obesity. In the former there is a peculiar distribution of the fat, leading to the formation of lipomata rather than to a general obesity. I had the privilege of seeing a large tumor of the pituitary body removed from one of the first cases of "maladie de Dercum" ever published. It is possible, therefore, since other pituitary tumors have been found in such cases, that there is some relationship between adiposis dolorosa and acromegaly. Tropho-neurotic is as good a word as metabolic perversion. I do not know what either of them means.

If the treatment of obesity were merely a mathematical proposition it ought to be reversible, but it is not. You can not make a pug dog out of a fox terrier; nor can you make of the lean, hungry-looking, ascetic type of man an individual blessed with an enviable degree of fatness.

THE BRAIN A GOOD FIELD FOR SURGERY, AS SHOWN BY ITS DISREGARD FOR TRAUMATISM.*

CHARLES D. CENTER, M.D.

QUINCY.

In these days, when there is practically no doctor too timid to invade the peritoneal cavity, it is astonishing to observe the reluctance, on the part of these same peritoneally brave operators, toward attempting any operation on the brain. There are several reasons for this state of affairs, each of more or less weight. There is, first, fear of attacking a so-called vital part, the same fear there would be in attacking a surgical condition of the heart. Then, there is the history, as given by statistics, of less brilliant results from the brain surgery. Next, the greater difficulty in locating the particular point of disease or injury in the brain as compared to the abdominal cavity, or, in other words, the greater uncertainty in diagnosis of cerebral and cerebellar conditions, especially among the members of the rank and file of the profession. The abdomen has become an open book, and even he who runs may read, and some who read with difficulty unhesitatingly do laparotomies that the deficiency may be overcome by sight and touch. The brain, on the other hand, calls for accuracy in diagnosis, for one does not feel like removing enough of the calvarium to allow introduction of the entire hand for diagnostic purposes, and brain convolutions can not be pushed aside, or pulled out, like the coils of intestine, to allow the eye to assist in the search for the hidden trouble. This weakness in diagnosis produces a distaste for operation by selection, and usually delays the operation until, if it is made, it is made from necessity. These considerations, taken as a whole, have led to the production of this paper, and an effort will be made to show that the brain is a good field for surgery, for early surgery, and for bold surgery.

There are many cases of brain injury on record where the patients, with or without operation, made seemingly miraculous recoveries. These recoveries are at once so numerous and so apparently wonderful that but one conclusion can be drawn, and that is that the brain is an insensitive, long-enduring structure. Furthermore, when these cases are classified, one must decide that by far the greater portion of the brain substance and brain area is not a vital part of the human anatomy; also, that focal symptoms arising from injury or operation need not be permanent. Still further, in death from brain injury the majority of the patients die from sepsis or from pressure resulting from the injury rather than from the injury itself. There has been no attempt to form any long list

* Read at the meeting of the Illinois State Medical Society, Springfield, May 16, 1906.

of cases of extensive brain injury, where, with or without operation, the patient recovered, but, to prove the point that by far the larger portion of the brain need not be considered vital, let me cite the following cases:

Lawrie (*Scot. Med. and Surg. Jour.*), a gunshot wound of the occipital lobes, with recovery.

Drew (*Brit. Med. Jour.*), gunshot wound of the motor area, operation and removal of the ball after five days, recovery.

Rehn (*Centralb. f. Chir.*), gunshot wound, ball in the cavernous sinus, removed on the sixth day, recovery.

Mingus (*Am. Med. Jour.*), two compound comminuted fractures, involving the vertical portion of the frontal lobe, the orbital ridge, the orbital roof, the great wing of the sphenoid, the horizontal plate of the ethmoid and the right parietal bones. Complete destruction of the left frontal lobe of the brain. Lived nine days.

Pope (*Am. Med. Jour.*), attempt at suicide by driving nail in brain. A three-inch nail was driven in full length in suture between parietal bones. Pus followed withdrawal of the nail. Recovery.

Lindsay (*Jour. A. M. A.*), gunshot wound passing from temple to temple, recovery.

Baldwin (*Columbus Med. Jour.*), injury opening the lateral ventricle, recovery.

Binkley (*Nashville Jour. M. and S.*), gunshot wound of motor area of brain, recovery.

Bloxam (*Lancet*), gunshot wound, laying bare and traversing the brain. Ball removed from temporal fossa on opposite side. Recovery.

Nancrede (*Phil. Med. News*), gunshot of anterior lobes. Ball deflected by base of skull. Recovery.

Parsons (*Brit. Med. Jour.*), gunshot wound of cerebral hemispheres, with hemiplegia. Complete recovery.

Evans (*Am. Jour. Surg. and Gyn.*), piece of wood removed from floor of skull, after 32 years *in situ*. Knife blade removed from left frontal lobe after 18 years *in situ*. Recovery.

Bell (*Brit. Med. and Surg.*), gunshot wound of head, the ball entering the temple just back of the orbit and emerging on the opposite side of the head. Recovery, with loss of sight on the side of entrance.

I will refer also to a case of hemorrhagic encephalitis, reported by me at the last meeting of this Society in this city. This case had extensive destruction of brain tissue, due to the tremendous intracranial pressure and to the punctate hemorrhages. It was estimated that at least one-fourth of an ounce of gray brain substance escaped when the operation opening was made. This case recovered completely.

In the *Index Catalogue* of the office of the Surgeon-General, U. S. A., I find recorded thirty-four cases of extensive brain injury, mostly gunshot wounds, where the patients recovered. From the summary of statistics compiled by the *Boston Med. and Surg. Jour.*, subsequent to the Spanish-American war, I quote the following: There were but seven recorded cases of trephining for gunshot wounds of the head. Perforating wounds

of the brain, if not immediately fatal, are recovered from without operation in the majority of cases. Quoting also from Senn's admirable medico-surgical history of the Spanish-American war: "To my own knowledge, a number of gunshot wounds of the head that survived long enough to be transported to the general hospital at Siboney died within twelve days of the receipt of the injury. In all of the cases, intracranial infection was the immediate cause of death. Encephalitis and leptomeningitis constituted the fatal complications."

Before relating my final case to prove my point, let me give a working formula for brain surgery. Barring accidents to blood vessels, with consequent pressure from blood clot, aseptic surgery of the brain, done before inflammation has begun, is safe surgery anywhere in the cerebrum outside and beyond the corpus callosum. In other words, the corpus callosum marks the dividing line between safe and more unsafe surgical procedures.

This is the history of B. D., male, age 10 years, suffering from a gunshot wound of the head from a 22-caliber rifle ball. The ball entered the head on a level with and one-half inch to the right of the occipital protuberance, and, as the boy was running forward, it is likely that the course of the ball was, at least, a little upward. The case did not reach my hands until three days after the injury, but the history shows that the child never became entirely unconscious. Immediately, or at least very soon after the injury, it was discovered that he was totally blind. On the third day, when I saw him, he had a temperature of 103° F., intermittent pulse, unequal pupils, was semi-comatose, had no use of the right hand, but could move the arm, perceptive faculties extremely sluggish, incontinence of urine, and an infected bullet tract. The wound had been probed, so a drain was passed up, following the direction which a 22-caliber bullet probe took. This drain was inserted for a distance of two and one-half inches. For about a week the case improved in every way, except vision and the focal symptoms of the right hand. Then the temperature rose again, hernia cerebri developed, and the boy complained of more pain, always referring the pain to the right frontal eminence. This point was the point directly opposite the point of entrance, as shown by the direction taken by the bullet probe, and as would be expected from the history of the position of the patient when shot. Thinking that the ball might be lodged at this point, and might be the cause of an anterior infection, an operation was done the fourteenth day after the injury. The chiseled opening at the right frontal eminence disclosed blood clot and broken down brain tissue, but no bullet. The point of entrance posteriorly was then enlarged, and the bullet probe passed boldly along the tract of the ball for a distance of five inches. Anteriorly, a thin grooved director was used in four directions searching for pus. None was discovered anteriorly, but the probe from behind opened a pocket from which a drachm escaped. Gauze drainage was used anteriorly and a five and one-half inch rubber tube posteriorly. The patient was put to bed in a condition as good or better than before the operation. I say "or better," because he had exhibited sighing respiration continu-

ously since the injury, and this symptom disappeared after removal of the pressure anteriorly and the drainage of the abscess posteriorly. The drainage in front was removed the fifth day. The tube in the posterior wound was in place for eleven days, and the channel and cavity were irrigated daily. During irrigation, as the pressure within the brain increased, the sighing respiration would become evident. In about ten days after the operation the boy could distinguish light from darkness, and sight, once established, improved rapidly. One curious phenomenon was his inability to judge distance. He would try to reach some article on the other side of the room, thinking it was within reach, or, if a cup of water was offered him within easy reach, he was quite likely to pass the hand the full length of the arm beyond the cup, nor could he tell, as he looked at the cup and hand, which was the nearer to him. He had, for a time, double vision and magnification and confusion of color sense. The further recovery of the case was wholly uneventful, all functions being completely restored. In submitting skiagraphs of this case, taken one year after the injury, you will notice several points of interest: First, the ball lies on the left side of the head, apparently just internal to the arm center of the Rolandic area on this side. I believe that it was disturbance of circulation in the arm and hand center, rather than an actual pressure from the ball or destruction of brain tissue, that caused the right arm paralysis. The skiagraph shows also the point of opening at the right frontal eminence. There is no doubt that the ball impinged at this point, and, striking a round surface of bone, was deflected to the left. The ricochet has left it on the opposite side of the head from which it entered. Fluhrer and Delbet have noted ricochet, with the deflected bullet taking a secondary course.

Following the course of this ball, we find that it passed through the right occipital lobes of the brain, the vision center. It then left the cortex, passing internal to the ascending parietal convolution, the center for movements of the fingers and wrist. It evidently passed internal to the centers for the hand, mouth, lips and tongue on the right side of the brain, for while all of these centers, as well as that for hearing, were disturbed there was no loss of function at any time, but rather a retardation of function. The frontal convolutions, which must have been traversed twice, gave no functional evidence of destruction, i. e., there was no disturbance of the lateral motion of the head or eyes, nor of the elevation of the eyelids. The ball must have traversed a plane just a trifle superior to the corpus callosum, thus passing external to the right lateral ventricle. In this case it was evident there was but little disturbance created by the destruction of arteries, for there were practically none of the usual symptoms attendant on brain pressure from blood clot, except that caused by the anterior hemorrhage, which manifested itself by the pain sense and by the sighing respiration. Reasoning, then, from this case, and from the others referred to, I can not help thinking that the cerebrum offers a good field for safe surgery, and that such work done early and under the usual aseptic precautions will give as brilliant results as are now obtained in the abdomen. I will go still further and say that a deferred

operation for brain injury subjects the patient to the unnecessary risk of sepsis, and that an operation then is an operation under disadvantageous circumstances. The day is coming when a perforating wound of the brain will call for immediate operation to establish drainage or to make needed repair, just as a perforating wound of the abdomen now calls for immediate laparotomy.

DISCUSSION.

Dr. Carl Beck, of Chicago:—The case reported by Dr. Center is certainly a very interesting one, and he is to be congratulated on the result of this operation. Unfortunately, the broad field of surgery of the brain has been greatly limited within the last two years, and, while we were very enthusiastic in former years as to the results to be obtained from operations on the brain, we have become more and more conservative in brain surgery, and the objections to it are those that he has mentioned in the preliminary part of his paper. I think as the cases become more numerous in the doctor's observation he will become a little more conservative also in brain surgery. Especially favorable, however, are the traumatic cases. Less favorable are those where we would enter the brain before we have established a diagnosis. In a fresh traumatism like this we have not much time to lose, on the one hand, in establishing an exit for the infected wound secretions. On the other hand, the best possible result may be obtained from operation performed early, with restoration to an almost normal condition.

With other pathologic conditions, tumors, etc., which cause complicated symptoms, the diagnosis is difficult, and after cerebral localization has been established very often the result from total removal is not gratifying. While the results in cases that were operated on at first were seemingly excellent, as the years have gone by the symptoms have gradually returned, and many patients, while not worse, probably are in about the same condition they were before operation.

Dr. W. F. Grinstead, of Cairo:—I have been much entertained by Dr. Center's paper on brain surgery. I believe the paper is very timely. For the last year or two I have often thought of it as he has presented it. The importance of the subject lies more in connection with injuries than diseases of the brain. I believe we can do more good in brain surgery by careful attention to brain trauma than we can to brain tumor or to conditions of the brain that have resulted from changes which have followed neglected injuries. If injuries to the brain are not treated promptly, permanent damage may be done, for which there is no remedy. Changes may take place in the brain structure as the result of long-continued compression, as a result of pressure either from bone or from clot, which may not be absorbed and which may undergo cystic degeneration; whereas if the case had been promptly treated, without fear, as suggested by Dr. Center, perhaps no permanent disability of importance would have resulted.

Dr. Center (closing the discussion):—I fully indorse everything Dr. Beck has said. There was nothing in my paper which conveyed the impression that I would advocate brain surgery for all of the brain conditions that might arise. At the present time I have one case of unquestioned brain tumor that I am not going to operate on, and there is no doubt as to the localization and character of the tumor, because the man gave a direct specific history, in the first place, and in the second place the gumma is sufficient to cause some of the bulging of the skull, so that I know where the tumor is situated. Therefore, for the reasons given by Dr. Beck, I have felt some hesitation in operating. The intent of my paper was to try to remove the fear which has existed over early operations following traumatism. If the paper has done any good in this way I am entirely satisfied.

RHEUMATISM.*

BENJAMIN BACHRACH, M.D.

DECATUR.

This one word implies a multitude of meanings. There is not a day that passes but some one will tell you he has the rheumatism. Many know they have it, because they have pain; many know it, because they have been told so; many have been treated for their troubles with salves, liniments and "anti-rheumatic" remedies; some carry a potato in their pocket or wear a cord about their waists. Not long ago an old man told me how much benefit he had obtained from rubbing coal oil on his legs every night, and there are many people who wear those wonderful "electric belts," a sure cure. There is no end to the list of cures that the laity have for rheumatism. You who see rheumatism in all its forms have become lax in diagnosing the several varieties and, of course, the treatment often fails. There is nothing which seems easier to treat and yet is harder to combat than rheumatism, often because of the improper classification of the disease.

MUSCULAR RHEUMATISM AND CHRONIC ARTICULAR RHEUMATISM.

By chronic rheumatism we understand an inflammation and hyperplasia of fibrous tissue, especially the fibrous tissue of the muscles, fasciæ, tendons, ligaments and nerve sheaths, which gives rise to pain. Chronic rheumatism must be distinguished from the transient attacks of subacute rheumatism, which are frequent in rheumatic subjects, from rheumatoid arthritis, myalgia and old traumatic lesions. Chronic articular rheumatism does not lead to fibrous ankylosis, and if, when a joint is examined, there are found firm, fibrous adhesions between the bones, then the probability is that the original is either rheumatoid arthritis or gonorrheal arthritis.

Symptoms.—Complaints of rheumatism in muscles and joints are extremely common in middle-aged persons. The pains and stiffness are commonly attributed to changes in the weather, to chill, damp, cold northerly or easterly winds or overexertion. If the joints be affected, no alteration in their appearance is to be noticed, the patient complains that the joint is stiff and painful in movement. There may be a dull aching pain, referred to the joint, worse at night or with damp or cold weather. The symptoms of muscular rheumatism are more marked and distinctive. The onset of pain may be sudden, and any movement of the muscle greatly aggravates it; the affected muscles are tender and occasionally in a state of spasmodic contraction. The patient complains of stiffness in the affected regions or all over the body, and there is a general feeling of weariness. The period of sharp pain and tenderness in the muscles soon subsides, leaving a dull, aching feeling and stiffness which may last for a long time. The stiffness is most marked on first rising in the morning or when getting up from a stooping or sitting pos-

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ture. The acute pain in the muscles not infrequently comes on at night and is aggravated by heat.

Treatment.—In the acute stage of muscular rheumatism, when the pain and tenderness are extreme, the administration of salicylate of soda or aspirin in doses of fifteen grains every three or four hours will in the majority of cases afford relief. In obstinate cases antipyrin should be tried or morphia hypodermically if necessary. In muscular rheumatism a calomel purge, followed by Epsom salts or Seidlitz powder, should be given at the onset. The parts should be kept at rest in the acute stage and warm fomentations applied, covered with methyl salicylate or liniments of chloroform and belladonna. After a few days, massage should be given; the diet should be light. Chronic muscular rheumatism is little influenced by drugs. Quinin, potassium iodid, alkalies, guaiacum and sulphur are the most efficacious. Massage is the most important therapeutic agent and should be combined with active and passive movements and with daily application of faradic current for five or ten minutes. Where skilled massage is not available, daily rubbings with a stimulating liniment should be tried night and morning; local counter irritation may be tried, also occasional hot baths, Turkish baths and change of climate.

The pains of true chronic articular rheumatism are not much relieved by salicylate. Sufferers from chronic and muscular rheumatism should make every effort to improve the general health by exercise in the open air, the bowels should be regulated by the administration of cascara sagrada or compound liquorice powder and occasionally a little calomel. If the tonsils are large or chronically inflamed they should be removed. Warm underclothing of wool is important, cold and damp should be avoided. The diet should be carefully regulated, the food should be plain, and the quantity of carbohydrates, sugar, sweets and potatoes must be limited. The amount of fluid should be in excess of normal and taken on an empty stomach. A glassful of hot water before breakfast and on going to bed and half a glassful half an hour before the noon and evening meal should be taken. A warm, dry, inland climate is the most desirable.

ACUTE ARTICULAR RHEUMATISM.

Definition.—A specific acute infective fever characterized by sweats, shifting inflammatory changes in the joints and related structures in the heart and in the serous membranes.

Age.—Rheumatic fever is essentially a disease of childhood and young adult life, it being rare in children under 1 year of age and uncommon after 50.

Sex.—Adult males are more subject to the disease than females, it being almost twice as frequent in males, due, perhaps, to the more exposed nature of their work and to manual labor, which lays a certain strain upon the joints.

RACE, CLIMATE AND SOIL, INFLUENCE OF SEASONS.

Although acute rheumatism may occur in any variety of climate and soil, it is more prevalent in subtropical and temperate climates and in

countries which have wide variations of temperature in the course of twenty-four hours. People who live in the city seem to acquire the disease more than those who live in the country. The colored races are less subject than the white. The common belief that rheumatism is more prevalent in the colder and wetter months is probably due to the fact that the pains of chronic rheumatism and rheumatoid arthritis are more troublesome at these periods.

Bacteriology and Pathology.—The usual initial seat of invasion by the organism is the tonsil and fauces; the diplococcus enters the blood stream and is distributed to all parts of the body, but it has a special affinity for the fibrous tissues and serous membranes. There is a difference of opinion as to the bacteriological cause of rheumatic fever, many believing it to be due to a diplococcus, while others assert that it is of a streptococcal origin. The consensus of opinion points to the diplococcus rheumaticus as the specific cause. The structures most affected in the joints are the fibrous and serous structures, such as the synovial membranes, tendons and ligaments. There is an excess of fibrinous exudation into the joint.

Symptoms.—The onset of rheumatic fever may be sudden or gradual. Generally, after a few days of malaise, the patient complains of pains and stiffness in the limbs and back and slight shivering. There is often a complaint of sore throat. Gradually, the pains become localized in the joints, passing from one joint to another and a definite arthritis is established. The patient lies helpless in bed, unwilling to move, the temperature rises to 102° or 103° Fahr. There is a profuse acid sweat, a coated tongue and constipation. If the salicylates be now administered for a few days, the temperature falls to normal and the attack after perhaps one or more relapses comes to an end. While this may not be true of a mild attack of acute rheumatism, the course of the disease may be very different; there are few diseases in which both the local and general symptoms may be more severe and intractable, or in which the complications and sequelæ may more seriously endanger the life of the patient.

Joints.—The joints most prominently attacked are, in order of frequency, those of the knees, shoulders, ankles, wrists, fingers and elbows. There is swelling due to effusion within the joint; the pain may be slight or severe and is increased on movement. A characteristic feature of arthritis is its tendency to move from one joint to another. The symptoms subside in one joint as they appear in another, but, as a rule, several joints are implicated together. The symptoms are aggravated at night. After subsidence of the attack, some stiffness and swelling may remain in the joints. The temperature is of irregular, remittent type. The skin is bathed in an acid perspiration; there is a loss of appetite and constipation. The most serious complications are those affecting the heart, such as diseases of the valves, pericardium or myocardium. The onset of heart involvement is slow and can only be diagnosed by carefully watching the pulse, temperature and daily examining the heart with the stethoscope.

Treatment.—(1) Place the body at rest so that the minimum amount

of strain is likely to be thrown upon the tissues most likely to be affected, such as the heart, joints and muscles. (2) Reduce pyrexia and relieve the painful arthritis by means of general and local remedies. (3) Guard against cardiac inflammation. (4) Give a careful diet. Daily sponging with hot water should be practiced to keep the skin clean, and the salicylates should be given, for it is generally agreed that they shorten the febrile period and relieve the arthritic pains. Sodium salicylate with sodium bicarbonate should be administered in 20 gr. doses every two hours for twenty-four and then every four hours for several days, care being taken not to produce salicylism, when the drug must be stopped for a time and perhaps some of the substitutes tried. Aspirin may be administered in 15 gr. doses every two or three hours. The bowels should be kept open, and if the pains are not relieved by salicylates an occasional dose of morphia should be given. Tonics should follow during convalescence. The joints should be wrapped in cotton or wool and lightly bandaged. Heart lesions require special treatment. Hyperpyrexia is best controlled by cold sponging. The diet should be liquid for the first few days and then gradually increased, but little or no meat given.

RHEUMATOID ARTHRITIS.

Spender, in Clifford Allbutt's "System of Medicine," gives the following definition of this disease: "A progressive degeneration of joints of a special kind, accompanied by atrophy of some structures and hypertrophy of others. The course of the disease is variable, but is ordinarily toward irrevocable damage and ruin of the structures involved." The division of the disease into an acute and chronic variety is hardly warrantable and we can only look upon it as being of a chronic nature. The disease is rare in children, commencing principally in adults between the ages of 35 and 50, and is more common in women than in men. Cold and dampness are productive of the disease, especially in those who have recently suffered from some infective disorder or a disturbance in the nutrition. The joint changes are partly inflammatory and partly degenerative, the synovial membrane is thickened and hypertrophied and masses of detached cartilage may be found in the slight excess of synovial fluid. At the edge of the articulation there is a new formation of cartilage in nodular masses, and plates of cartilage may form in the ligaments or in the capsule of the joint; the bones where the cartilage has been eroded become hard and eburnated on the surface, and may develop ridges and grooves, when in contact with other bones; at the edges of the articulation the formation of new bone gives rise to lipping, and the original shape of the articulating surface may be entirely changed. True bony ankylosis is exceptional. The ligaments of the joint undergo fatty degeneration and the muscles show signs of atrophy.

The two theories with regard to the causation of rheumatoid arthritis which predominate to-day are those which attribute it either to a nervous or to an infective origin. The three most prominent features in connection with the causation of this disease are the inheritance of an arthritic diathesis, a condition of malnutrition and debility, and the presence

of a toxic focus, the latter of which can nearly always be elicited in procuring a careful history of the case. The joints most frequently attacked are the small joints of the fingers, metacarpo-phalangeal and wrist joints, the knees and ankles. The disease generally begins in the peripheral joints and spreads to those nearer the trunk. The onset of the disease is insidious, beginning with a constant gnawing pain, progressive stiffness and deformity of the joint, which becomes shapeless and crippled. Dislocations may exist and the parts involved may be deflected out of their usual positions. The wasting of the muscles is, in part, responsible for the increasing immobility of the joints, which is also due to the bony outgrowths and the thickening of the fibrous structure. Any attempt at movement causes pain and a creaking, crackling or grating may be both felt and heard over a joint. Rheumatoid arthritis is never a fatal disease and the prognosis centers around the progress of the disease and the extent of the crippling in the joints.

The disappointing results which so often reward the most careful treatment of rheumatoid arthritis are due to the fact that the treatment is undertaken too late and that during the early stages the arthritis has been treated on wrong principles. A common mistake is to attribute the arthritis to a strain or other accident and to treat the local condition altogether apart from the general constitutional state. It is only when other joints become involved that the condition is recognized and the general symptoms of rheumatoid arthritis are found to exist. We ought to suspect the existence of the disease whenever a chronic arthritis results from some trivial strain, and more especially if the joint conditions persist in spite of the usual remedies.

In order to effect an absolute cure in rheumatoid arthritis there must be early recognition of the disease and the discovery of the source of infection which is capable of removal. This seeking out of a primary focus of infection and its correction is the first and most important step in the treatment of rheumatoid arthritis. Cases that have no toxic center and are of rheumatic origin are the most difficult to deal with. Care should be exercised in the diet of the patient and an increase of the nitrogenous and fatty constituents is advisable, such as meats and milk. Vegetables and fruit may be taken freely. The clothing should be warm; exercise in the fresh air is essential when the weather permits.

Rheumatoid arthritis is not directly controlled by drugs; guaiacol carbonate in milk, 5 or 10 grains, three or four times a day, is one of the best remedies if continued for some time; sodium salicylate and aspirin in full doses often aid in relieving the pain, as will also anti-pyrin. Tonics, such as cod-liver oil and iron preparations, may be given with much benefit. Local applications act only as palliative agents. Massage and baths do much good and they should always be given with much care and attention, as they improve the patient's general nutrition and the amount of muscular wasting is reduced. Electrical treatment is of much service. It arrests the progress of the disease and ameliorates the general and local conditions; there is increased mobility, freedom from pain and improvement in the general health after careful electrical treatment.

GONORRHEAL RHEUMATISM.

Gonorrheal rheumatism, as the name implies, is due to a systemic infection from the gonococcus and manifests itself by a subacute or chronic arthritis of one or more of the larger joints, particularly the knee or ankle joints. A more or less recent history of urethritis can always be elicited in these cases, but the third or fourth week of disease seems to be the time when the onset of arthritis is most common. The first symptoms of joint involvement are pain and disability; swelling follows within a few hours, at first from serous effusion into the synovial membrane, and later from a diffuse edema of all periarticular structures. Ankylosis of joints is not infrequent in gonorrheal rheumatism. It is particularly likely to follow acute cases of the polyarticular variety. Although only fibrous in nature, the adhesions are very firm and may lead to serious crippling. The first and most important point in treatment is the cure of the urethral discharge. The arthritis can then be treated by rest, bandaging, etc. The salicylates and other drugs have little or no effect on the disease, except in relieving pain. The usual dietary should be given especial attention in these cases.

Conclusion.—It has been my endeavor in taking up the "rheumatic diseases" as I have, to emphasize the necessity for a careful and scientific diagnosis of every case of rheumatism that comes to our notice. If we expect to get results with these cases we must first make a satisfactory diagnosis, then treat the case with that care which it demands.

VIOLENT DEATHS IN CHICAGO.

A STATISTICAL STUDY.

THOMAS GRANT ALLEN, A.M., M.D.

CHICAGO.

Under the head of violence, in most tables of vital statistics, are included not only such violent deaths as suicide and homicide, but the deaths due to accident and mishap as well, such as railway and street-car accidents, burns, drowning, explosions, gunshot wounds, suffocation and sun-stroke. In examining the vital statistics for Chicago for the past five years,

TABLE 1.—DEATHS FROM ALL FORMS OF VIOLENCE.

Year.	No. of deaths.	
1905	2,107	Total 1903-5..... 6,709
1904	2,014	Total 1904-5..... 10,346
1903	2,588	Total 1904-5..... 4,121
Average for past 3 years.....		2,236
Average for past 5 years.....		2,069
Average for past 2 years.....		2,060

one is struck by the large number of deaths reported as due to violence. In 1905, the number was 2,107, in the previous year 2,014, scarcely 100 less, while in 1903 the deaths from violence reached the enormous number of 2,588. The total for the last three years, therefore, is 6,709, and for the past five years the total is 10,346. The average annual violence mortality for the past three years was 2,236. The figures for 1903, however, include the 561 deaths due to the Iroquois Theater disaster, and it

may seem that we would get a truer estimate of the average yearly sacrifice in Chicago by taking the average of the past five years. This would give an annual violence mortality of 2,069. If we leave 1903 out of our calculation and take the average of the past two years, 1904 and 1905, we find the average violence mortality to be 2,060, or almost exactly equal to the average of the past five years, including the Iroquois Theater horror.

TABLE 2.—TWO THOUSAND DEATHS FROM VIOLENCE EVERY YEAR
IN CHICAGO MEANS:

- 1 violent death for every 950 living.
- 1 violent death for every 13 deaths, all causes.
- 1,058 violent deaths for every million of population.
- 6 violent deaths every day.
- 40 violent deaths every week.
- 4 Iroquois Theater disasters every year.

We may safely place the average annual violence mortality of Chicago, then, at 2,000, and we need not expect the number to fall below this again, unless we, as physicians, pay more attention to this matter than we have heretofore.

What does it mean to say that there are 2,000 violent deaths a year in Chicago? It means that every year there is one violent death to every 950 living. It means 1,058 violent deaths to every million of the population. It means that every thirteenth death is a violent death, and, if we were to exclude from this calculation all deaths under 5 years of age, then the proportion is about one violent death in every eleven from all causes. Two thousand violent deaths a year means 6 violent deaths every day, 40 violent deaths every week, 50 miles of funerals or 4 Iroquois Theater disasters every year.

TABLE 3.—VIOLENT DEATHS AND DEATH RATES FOR EACH OF THE
YEARS 1901 TO 1905.

Year.	Total Deaths from Violence.	Total Deaths to 10,000 Deaths all Causes.	Deaths all Causes to 1 Violent Death.	Violent Deaths to 1,000,000 popu- lation.
1901	1,750	717	14	996
1902	1,887	713	14	1,039
1903	2,588	895	11	1,381
*	2,027	715	14	1,079
1904	2,014	765	13	1,042
1905	2,107	774	13	1,058

* Not including the Iroquois Theater disaster.

Is violence increasing or decreasing? Let us see. In the last four years, 1901 to 1905, the deaths from violence have increased from 1,750 to 2,100, or exactly 20 per cent. If this rate were to continue to 1920, our annual sacrifice will then be 3,500 lives.

Now, the population has increased at no such rate. Had the population increased in the same ratio there would have been 996 violent deaths per million in 1905, instead of 1,058. This means that there were 120 more violent deaths in proportion to the population in 1905 than there were in 1901, or, to put it in another way, had the rate which obtained

in 1901 persisted through the five-year period or pentad, there would have been 1,000 less violent deaths.

If, now, instead of comparing the rates per million living, we compare the rates per 10,000 dying, we shall find that, in 1901, the violent deaths were 717 in every 10,000 deaths; in 1904, they were 765, and in 1905 they were 774. This means that, had the rate for 1901 obtained in 1905, in that one year there would have been 155 fewer violent deaths. This same comparison is made in a slightly different way by saying that, in 1901, every fourteenth death was a violent death, while in 1905 every thirteenth death was a violent death.

We conclude, then, that violence mortality has been increasing in Chicago during the past four years and that the increase in proportion to the deaths from all causes is greater than the increase in proportion to the population. This can only mean that the violence mortality is increasing faster than the mortality from all causes.

We are always in danger, however, of drawing misleading conclusions when we compare a single year with another, and especially are we apt

TABLE 4.—COMPARISON OF VIOLENCE MORTALITY AVERAGES FOR STATED PERIODS.

Period.	Average Deaths from Violence.	Violent Deaths to 10,000, Deaths all Causes.	Deaths all Causes to 1 Violent Death.	Violent Deaths to 1,000,000 population.
10 years, 1896-1905	1,814	716	14	1,052
5 years, 1901-05..	2,069	772	13	1,103
3 years, 1903-05..	2,236	811	12	1,160
2 years, 1904-05..	2,060	770	13	1,050
Excluding Iroquois Theater Disaster.				
10 years, 1896-1905	1,758	699	14.3	1,022
5 years, 1901-05..	1,959	737	13.5	1,043
3 years, 1903-05..	2,050	751	13.3	1,060
2 years, 1904-05..	2,060	770	13.0	1,050

to make errors when the two years compared are, as in the U. S. Census Reports, several years distant from one another. One year may be unusually healthful, while the other year may be unusually unhealthful. Similarly, there may be waves of violence, such as the Iroquois Theater and the Slocum disasters. The average for pentads or decades will give us a truer basis of comparison.

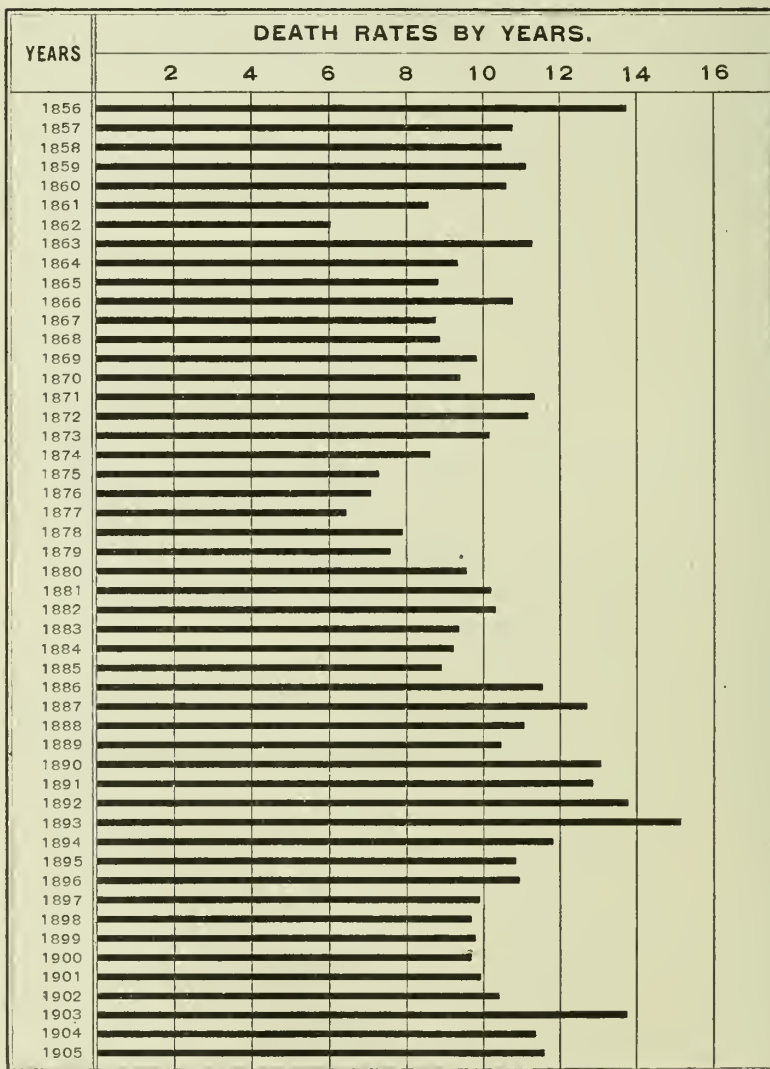
To see whether this method would alter our conclusions in any way, I have averaged the violence statistics of Chicago for the past two, three, five and ten years. It will be seen, whether we compare the violent deaths with the deaths from all causes or with the population, that the rate for the past three years is greater than it is for the past five years and that this, in turn, is greater than the rate for the past ten years. If we exclude the Iroquois Theater fire, we find that the rate for the past two years is higher than that for the past three and increasingly higher than the five- and the ten-year rates. So much higher is the rate for the past two than the average for the whole decade that, had the rate for the decade prevailed last year, in that year alone we should have saved 190 citizens from violent deaths.

Undoubtedly, then, violence has been increasing during the whole decade. Has it been increasing for twenty or thirty years? How does

DIAGRAM I.—VIOLENCE.
(ALL FORMS.)
DEATHS PER 10,000 OF POPULATION.

Average death rates for stated decades.

1856-65	10.06
1866-75	9.64
1876-85	8.61
1886-95	12.32
1896-05	10.52



the past decade compare with previous decades in the matter of violence?

Diagram I shows that the violence mortality during the past decade

was less than during the preceding decade, which may be called the World's Fair period. We know that this was a time of unexampled growth of population, of expansion of traffic, of hurried and often unsafe building operations and of many grade crossings. With the exception of this decade, 1886-1895, however, the past ten years, 1896-1905, show

DIAGRAM II.—COMPARISON OF THE VIOLENCE MORTALITY RATES OF THE PAST THREE AND TEN YEARS WITH PRECEDING PERIODS.

Period	Average Annual Rate per Million						
	200	400	600	800	1000	1200	1400
1856-65					1006		
1866-75					464		
1876-85					861		
1886-95						1232	
1896-1905					1052		
30 yrs 1856-85					944		
30 1856-1905					1023		
10 1896-1905					1052		
3 yrs 1903-05					1060		
3. 1903-05 including Influenza Theater Deaths						1160	

a greater violence mortality rate than any previous decade during the past fifty years, and a notably higher rate than the decade next preceding the World's Fair. The violent deaths during the last ten years were 110 per million more than the average of the thirty years ending 1885, higher than the average of the past forty years, and 29 per million higher than the average of the whole fifty-year period. The average of the past three years, as has already been shown, is still higher than this, higher by 137 per million than the average for fifty years.

Again, we notice that for thirty years the rate decreased, then sud-

denly and enormously increased, again fell and again is on the increase. The highest point reached was in 1893, when the rate rose to 1,520 per million, which means that 750 lives were sacrificed in that year alone above the average annual sacrifice for the fifty-year period.

Thereafter the rate declined rapidly to the census year, 1900, when it reached 97, the lowest rate since 1885, when the population was 665,000, or about that of St. Louis or Boston to-day.

We see, then, that the violence mortality rate is now higher than the

TABLE 5.—VIOLENCE MORTALITY IN SIX LARGEST CITIES OF UNITED STATES, 1902.

City.	Population.	Deaths.	Rate.	Violent Deaths.	Per Million.	Per 10,000 Deaths.
New York	3,623,000	67,986	18.8	3,795	1,047	558
Chicago	1,815,000	26,485	14.6	1,980	1,091	748
Philadelphia ..	1,343,000	23,578	17.6	1,181	879	501
St. Louis	600,000	10,363	17.3	621	1,025	599
Boston	584,000	10,999	18.9	671	1,150	610
Baltimore	524,000	10,255	19.6	508	962	492

average of the fifty years and higher than any part of these fifty years, except the eleven years from 1886 to 1896, inclusive. Is the violence mortality for other large cities greater or less than that of Chicago?

There are three cities in the United States with populations exceeding one million and three others having a population exceeding half a million. These statistics are for the year 1902. For purposes of comparison we note that Chicago is one-half the size of New York, equal to Philadelphia and Baltimore combined and rather larger than St. Louis, Boston and Baltimore combined. The violent deaths in Chicago that year were more than half as many as in New York, more than equal to

TABLE 6.—SHOWING VIOLENCE MORTALITY RATE IN CHICAGO AND IN THE CITIES OF EACH OF THE REGISTRATION STATES.

Cities.	Violence mortality per million of population
Chicago	1905 1,058
Chicago	1900 972
New Jersey cities	1900 973
Michigan cities	1900 951
District of Columbia	1900 929
Connecticut cities	1900 908
New York cities	1900 835
Rhode Island cities	1900 791
Vermont cities	1900 772
Massachusetts cities	1900 730
New Hampshire cities	1900 661

those of Philadelphia and Baltimore and more than equal to the sum of those in St. Louis, Boston and Baltimore. When we calculate the exact rate per million of population, we find that in that year Chicago was worse than New York, St. Louis, Philadelphia and Baltimore, and, while its violence was exceeded by Boston, we should remember that in that year Chicago's rate was much lower than its average and Boston's rate higher than its average. In 1903 Chicago's rate was much higher than that of any of these cities.

If, now, we compare the violence in these cities, taking as a basis the number of violent deaths to 10,000 deaths from all causes, we find that Chicago is by far the worst. That this is so is partly owing to a fact of which most of us are justly proud, viz.: the death rate in Chicago is lower than that of any of the large cities, and this is true not only of this country, but of Europe as well. That the general mortality is much lower, while the violence mortality is higher in Chicago than in other cities, seems to show that those who have to do with the prevention and cure of disease do their work better here than those whose duty it is to prevent accidents and murders, and serves to bring out more clearly the unenviable violence notoriety which we see deservedly belongs to Chicago.

We have already seen that the violence mortality rate in Chicago for the census year 1900 was the lowest in twenty years, yet the census report shows that it was higher that year than the average rate for all the cities of the registration states* and for each of these states individually, except New Jersey and Maine. It is a noteworthy fact that, while the

TABLE 7.—VIOLENCE MORTALITY COMPARED WITH TOTAL MORTALITY.

Decade.	Population in Thousands.	Average Annual Deaths all Causes.	Average Annual Violent Deaths.	Deaths all Causes per 1,000.	Violent Deaths per 1,000.	Violent Deaths to 1,000 Deaths.	Deaths all Causes to 1 Violent Death
1856-65	109	2,800	120	23.40	1,006	43	23
1866-75	307	7,400	300	23.80	964	41	24
1876-85	503	10,700	460	20.30	861	46	22
1886-95	1,209	21,300	1,300	20.10	1,232	60	17
1896-1905	1,699	25,200	1,800	14.71	1,052	72	14
1904	1,935	26,300	2,000	13.62	1,042	76	13
1905	1,995	27,200	2,100	13.67	1,058	77	13

Massachusetts cities are made up largely of mill and factory operatives, yet, owing to the efficient factory inspection and the regulations intended to safeguard the lives of the operatives, the violence mortality of this state is the lowest but one of this whole group and about 20 per cent. lower than the Chicago rate.

It is interesting to compare these rates with the violence mortality rates of England and Wales. For the decade of 1886 to 1895 the rate for England and Wales was 648, but slightly more than that of the Chicago rate for the same period and only about 60 per cent. of the Chicago rate for the last decade of 1896 to 1905.

It is a well-known fact that the death rate from all causes and from all or nearly all communicable diseases has been greatly reduced in the past fifteen years, the rate for the last decade, 1896 to 1905, being markedly lower than the average rate for the past fifty years (see Diagrams III, IV and V). In contrast with this we have already seen that the violence mortality for the past decades was higher than the average for fifty years and was increasing. Thirty-five years ago 4 per cent. of all

*The registration states are Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, District of Columbia and Michigan.

deaths were violent, or 1 in 24. Now nearly 8 per cent. are violent deaths, or 1 in 13.

Table 7 enables one to make a comparison of the death rates from infectious diseases, all causes, and violence.

The saving last year alone over the average fifty-year rate is as follows: Tuberculosis, 470 lives; typhoid, 1,000; scarlet fever, 1,200; diphtheria, children under 5 years, 11,000, all ages, 11,000. Had the vio-

TABLE 8.—MORTALITY RATES FOR THE DECADE 1896-1905 COMPARED WITH HALF CENTURY.

Cause.	Average Mortality per Million of Population.	
	For 50 Years 1856-1905	For Decade 1896-1905
Tuberculosis	1892	1531
Typhoid fever	632	310
Scarlet fever	644	120
Smallpox	279	8
Measles	219	83
Diphtheria	1237	418
All causes	20460	14710
All causes under 5 years	10060	4910
Violence	1023	1052

lence mortality decreased in proportion to the typhoid decrease, 1,500 lives would have been saved from violent death during the last year alone.

One other comparison suggests itself. Irrespective of the increase or decrease, how does the number of deaths from violence compare with those from some of the principal causes, e. g., from typhoid fever, tuberculosis or heart diseases? During the past decade only four other causes contributed more to the total mortality than violence. These were pneumonia, consumption, diarrheal diseases and nervous diseases.

TABLE 9.—PRINCIPAL CAUSES OF VIOLENCE.

Cause.	Chicago, 1905.	Chicago, 1900.	Registration Cities, 1900.	Registration Area, 1900.	U. S. 1900.
Suicide	430	356	2,856	3,400	5,500
Railroad Accidents	319	258	2,941	3,792	6,930
Falls	285	219
Homicide	185	102	609	657
Street car	147	73
Drowning	145	131	2,254	3,152	5,400
Burns	140	126	2,118	2,545	6,772
Total	2,107	1,652	21,718	27,649	57,513

Diagram VII shows the rates and relative importance of each of the twelve causes which contributed most to the total mortality of Chicago during the past decade, from 1896 to 1905.

The violent deaths were more than two-thirds as many as those from consumption and more than the deaths from heart disease. There were as many deaths from violence as from cancer, diphtheria and scarlet fever combined, or as many as due to diphtheria, typhoid, scarlet fever, smallpox, whooping cough and measles altogether, i. e., the violence

mortality was practically equal to the total mortality from the communicable diseases, with the exception of pneumonia and consumption.

Now, if we inquire further as to which class of violence—the railway accidents, the suicides, etc.—contribute most to the violence mortality, we shall probably be surprised to find that suicides furnish the largest number. Without an examination of the statistics we would probably say that those killed by railways outnumber those from any other single cause, and this is true, or was in 1900, taking the country as a whole, but in Chicago suicides are first, railway accidents second and murders fourth.

In Chicago, during the past two years, the 2,060 average annual number of violent deaths were distributed as follows:

TABLE 10.—ORDER OF CHIEF CAUSES OF VIOLENCE AND PERCENT WHICH EACH IS OF THE TOTAL. AVERAGE FOR 2 YEARS, 1904-05.

Suicide	426	21	per cent.
Railway Accident	322	16	per cent.
Falls	300	15	per cent.
Homicide	158	8	per cent.
Burns	150	7.5	per cent.
Street Railway Accidents	136	7	per cent.

It is interesting to compare these numbers with the average annual deaths from the communicable diseases during the past two years.

TABLE 11.—CHIEF CAUSES OF VIOLENCE COMPARED WITH COMMUNICABLE DISEASES. AVERAGES FOR 1904-5.

Diphtheria and croup	421
Suicides	426
Typhoid fever	351
Railway accidents	322
Scarlet fever (111), Measles (139), Smallpox (45), and malaria (11)	306
Falls	300
Scarlet fever and smallpox	156
Homicide	158
Measles	139
Street railway accidents	136

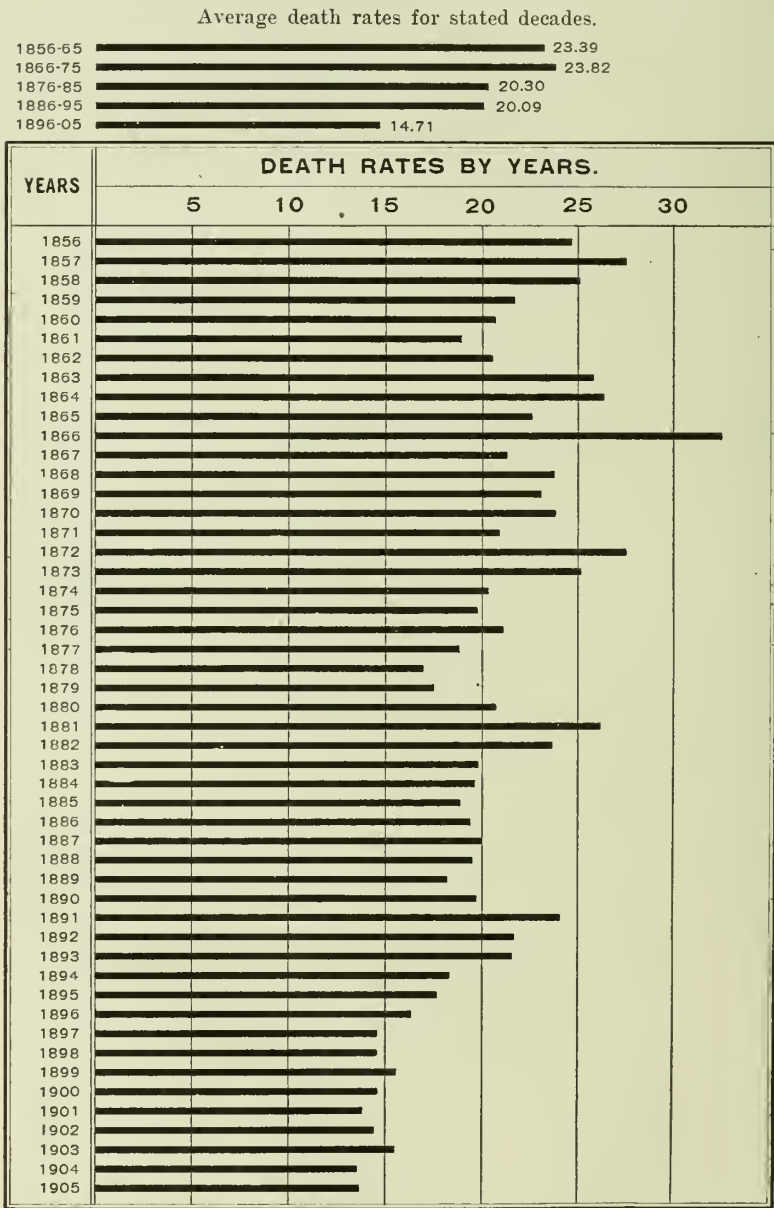
From these tables it appears that the suicides are more than one-fifth of all violence; railway accidents and falls about one-sixth, each, and that three causes together make up more than half the total. The railway and street-railway accidents together furnish 22 per cent., while suicides and murders together contributed 27 per cent.

There are as many deaths from suicide as from diphtheria and croup. Nearly as many from railway accidents as from typhoid fever. The deaths due to scarlet fever, measles, malaria and smallpox all together are only a few more than those due to falls and less than those due to railway accidents. The murders exceed the number killed by scarlet fever and smallpox, and the number killed by street railways is equal to the deaths from measles.

Is this slaughter of human life capable of being lessened or prevented? My answer is, unhesitatingly, that it can be lessened fully 50 per cent. From 1890 to 1897 the number killed by railroads in Chicago was reduced from 22 to 11 per 100,000, or exactly 50 per cent. When it is remembered that a very large percentage of the suicides, 20 per cent.,

destroy themselves during the temporary absence of their nurse or friends and that another large per cent.—35—commit suicide by taking poison,

DIAGRAM III.—DEATHS FROM ALL CAUSES.
DEATHS PER 1,000 OF POPULATION.



which, if the statutes were enforced, they would be unable to obtain, when these things are remembered, we see how largely these violent deaths could be diminished. Then, if the building laws and building-inspection

laws were even fairly well enforced, fully another fifth of these deaths would be prevented. Last year there were 185 murders in Chicago. If

DIAGRAM IV.—SCARLET FEVER.
DEATHS PER 10,000 OF POPULATION.

Average death rates for stated decades.

1856-65	13.93
1866-75	6.65
1876-85	8.06
1886-95	2.38
1896-05	1.21



Chicago was governed like London, there would have been 175 less.

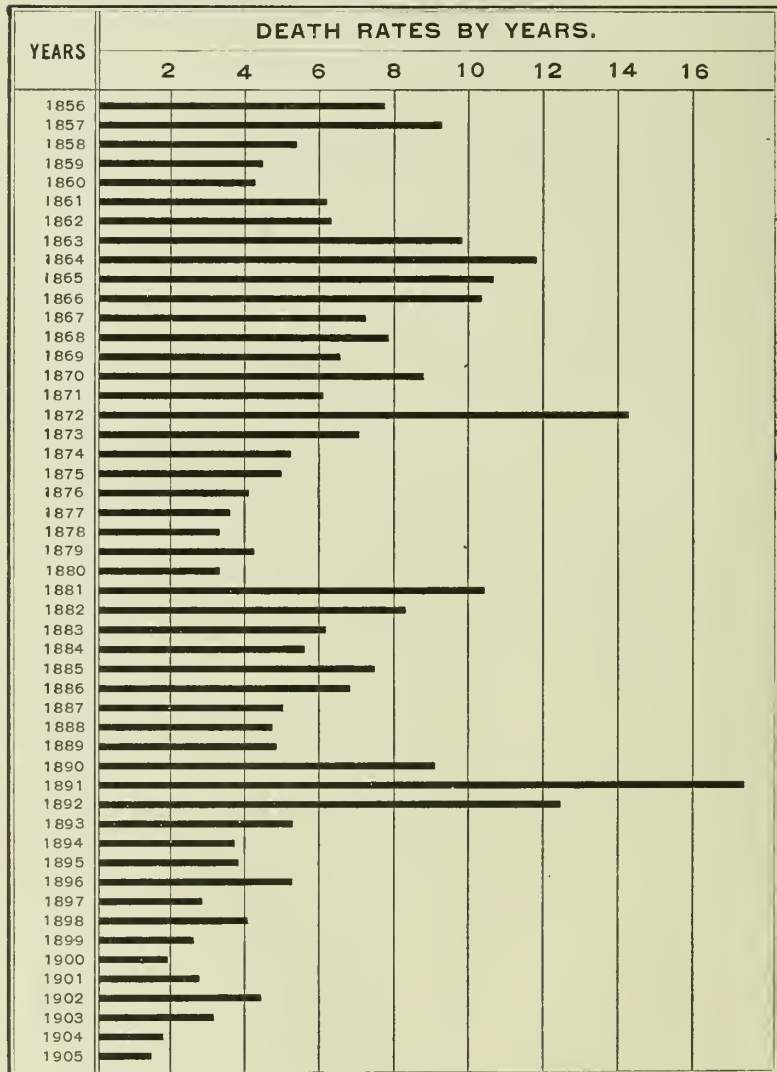
Perhaps this is not strictly an affair of physicians, but anything that affects human life is not far afield of the physician's interest. It is my

earnest hope that a committee of the medical society be appointed to consider why the violence mortality of Chicago is so high, how it may be

DIAGRAM V.—TYPHOID FEVER.
DEATHS PER 10,000 OF POPULATION.

Average death rates of the stated decades.

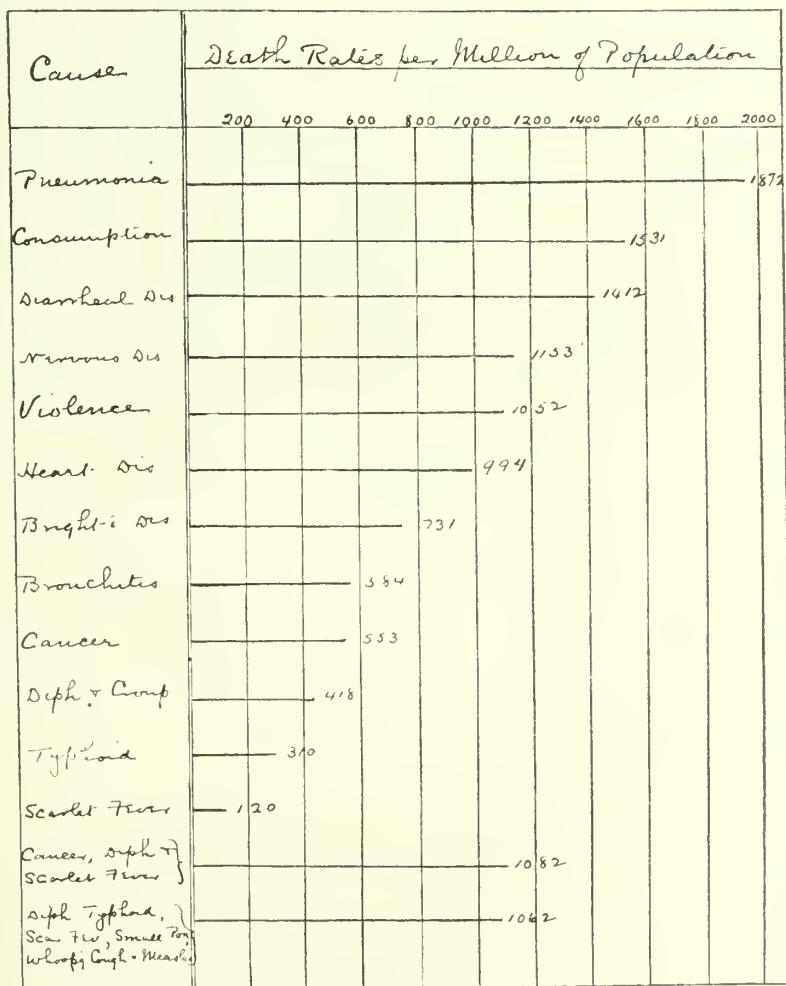
1856-65	7.62
1866-75	7.88
1876-85	5.67
1886-95	7.32
1896-05	3.10



reduced, and how a propaganda by the press and the physicians can aid in bringing about such a reduction. Let me repeat, at least 1,000 lives a year can be saved in Chicago if every physician will only take the time

and trouble to report every violation of the ordinances intended to safeguard life, such as absence of gates at grade crossings, dangerous buildings or scaffoldings, lack of fire escapes, etc. The 3,000 physicians of Chicago could easily, if they would, keep at it, make their aldermen, police officers and authorities in general feel that we expect them to en-

DIAGRAM VI.—VIOLENCE MORTALITY RATE COMPARED
WITH THE RATES FROM OTHER CAUSES.



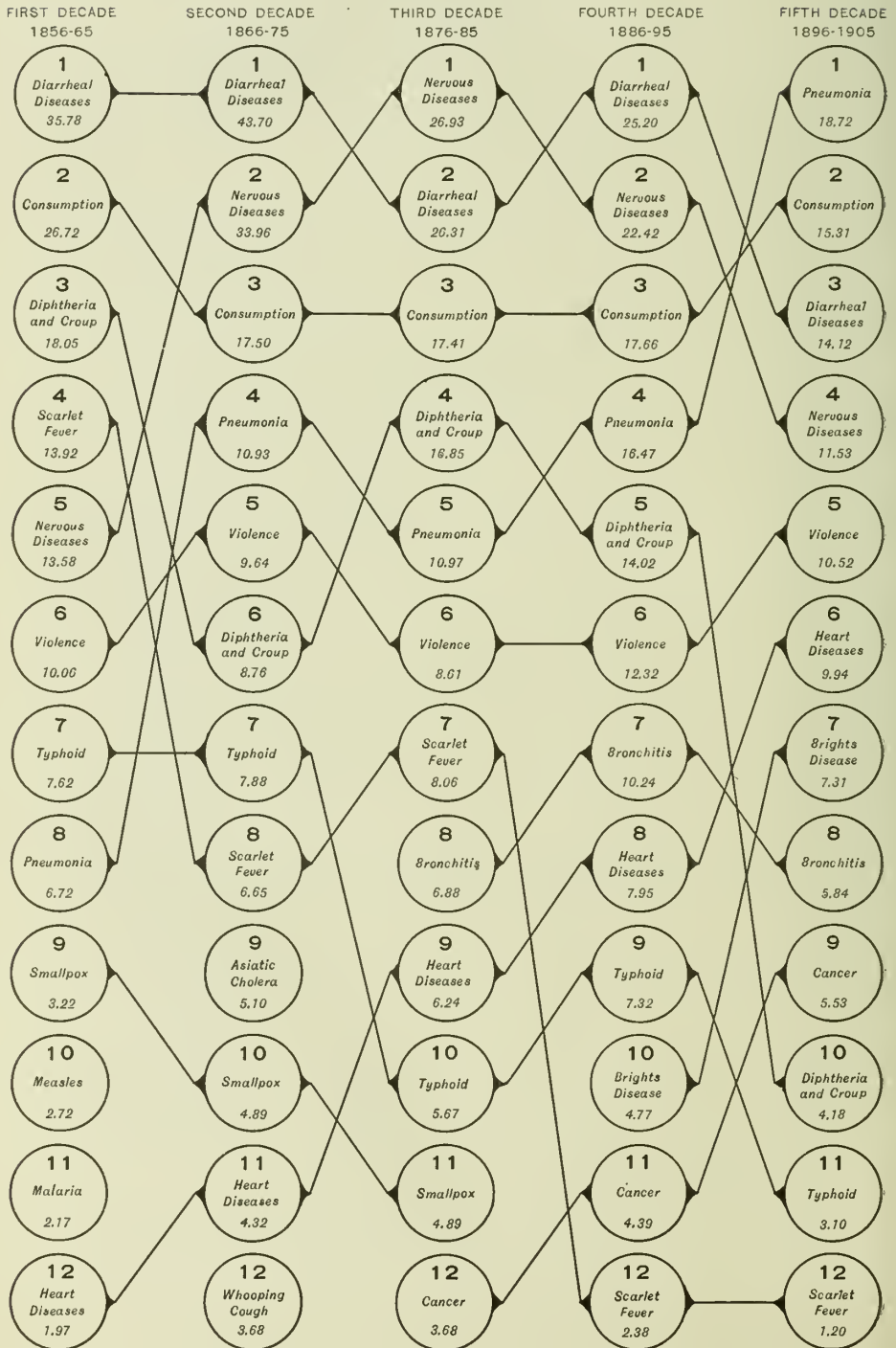
force the law and make them know that there is an organized body of 3,000 intelligent, observant people going about in this city every day, taking notice of delinquencies, a body of men who will not quit holding up our shortcomings as a city, until this great wrong has been rectified.

5661 Washington Avenue.

DIAGRAM VII.—CHIEF CAUSES OF DEATH DURING
HALF A CENTURY IN CHICAGO.

IN ORDER OF HIGHEST DEATH RATES PER 10,000 OF
POPULATION.

By decades—1856 to 1905 inclusive.



ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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SEPTEMBER, 1906.

THE WEST VIRGINIA MEDICAL JOURNAL.

The West Virginia State Medical Association is the last state organization to take up the journal idea, and on August 1 issued the first number of the *West Virginia Medical Journal*, which will be published bi-monthly by the committee on publication, of which Dr. S. L. Jepson, of Wheeling, is chairman. The first journal contains fifty pages of reading matter and eight pages of advertisements. It is well printed and edited and should receive the hearty support of the entire profession of West Virginia.

Among the interesting items we note in this issue that twelve of the state medical appointees are not members of the state society and that the organization has taken up the subject of the State Board of Health and has asked the Governor to consider the State Medical Society hereafter in the appointment of members of that body. This being a subject of live interest to physicians of Illinois, we print herewith the text of the resolutions offered at the last West Virginia meeting:

WHEREAS, The State Medical Association is the sole representative of the organized medical profession of the state; and,

WHEREAS, It is composed of educated, progressive and liberal-minded physicians; and,

WHEREAS, The profession, thus organized and growing, is now and always has been ready and willing to lend its services to the state and to

every community in developing an interest in sanitay science and in putting down epidemics, limiting the spread of disease, and lessening sickness, and consequent poverty and suffering; therefore,

Resolved, That it is respectfully but urgently suggested to his Excellency, the Governor of the state, that the greatest harmony will be secured and the best results to the state will follow if all members of the State Board of Health and the medical members of all other boards that may be composed in part of physicians be chosen from the membership of the West Virginia State Medical Association. We, therefore, most respectfully urge the Governor to make all future medical appointments from the membership of this Association.

The resolutions were unanimously adopted with applause, and, on motion, the Secretary was instructed to send a copy of the resolutions to the Governor of the state.

The State Board of Health was also asked to secure authority to rescind or revoke the license of any practitioner who by reason of his conduct, vicious habits or mental condition may be found a danger to the public.

These two subjects might be very appropriately touched upon by the Illinois State Medical Society.

VIAVI REMEDY COMPANY.

A number of cities in Illinois have been invaded by people calling themselves the Viavi doctors, and in Springfield, at least, a hospital has been started, dedicated to this method of treatment. A church parlor was secured to exploit this remedy, and all modern methods are being used to boom it. In Adams County, according to the report of the local society, the agent was fined and seems to have been required to promise to cease violating the law. The following statement of the character of this medicine is taken from the *Medical Sentinel*, and if this be true an earnest effort should be made to put these people out of business:

THE VIAVI CONCERN.—In some states the authorities are getting after the Viavi concern, but we have not heard of any such proceedings in the coast states. In Colorado the authorities have had the drugs used in the course of the Viavi treatment chemically analyzed, and the analyst has reported that they are largely opiates. The local agent is being prosecuted for selling and dispensing medicines containing poisonous vegetable alkaloids under the guise of harmless preparations. It is claimed that these Viavi people even have succeeded in getting into the church parlors for the purpose of expounding their theories and selling their nostrums. One woman who had been treated by them subsequently consulted her regular physician, and he told her that she had been taking morphin. She indignantly denied this, but admitted the Viavi. The analyst stated that 85 per cent. of the liquid was morphin and 15 per cent. glycerin. The Viavi product comes from California, but it is spreading all over the country, and the public interest would seem to demand that it receive attention from the various state authorities, as it has in Colorado.

MINUTES OF THE MEDICOLEGAL COMMITTEE.

The executive committee of the State Medicolegal Body met in Chicago, July 25, with Dr. W. A. Evans as temporary chairman and C. D. Pence temporary secretary. Those present were Dr. J. F. Percy of Galesburg, Dr. E. W. Weis of Ottawa and Drs. W. A. Evans, H. N. Moyer and C. D. Pence, Chicago. A letter from Dr. M. L. Winstead was read, stating that it was impossible for him to be at the meeting at this time.

The matter of the affiliation of the medicolegal committee of the Chicago Homeopathic Medical Society was discussed. As they are already in affiliation with the medicolegal committee of the Chicago Medical Society, it was decided that their continued coöperation would be both legitimate and desirable and that an explanation should be given the Chicago Homeopathic Society of the changes in the workings of the committee.

It was the opinion of the committee that an effort should be made to affiliate with the medicolegal committee of the State Homeopathic Medical Society during the coming year.

Dr. Weis moved that Drs. Evans and Moyer draw up a card of instructions, giving information in regard to instituting defense, etc. These to be sent to the various members of the executive committee for suggestions and, after revision, to be mailed to each member of the medicolegal committee. Carried.

Paying of attorney's fees was discussed by the committee, especially as to the advisability of attempting to pay either a part or all of the attorney's fees in damage suits. It was decided to pay all the expenses of a case up to the time of trial and one-half the trial attorney's fees, the defendant paying the other half, and if at the end of the year the financial condition of the committee would warrant it to refund to the defendant the amount he had paid, the committee thus paying the entire expense of a damage case.

The question of a central office was next considered. Dr. Weis moved that the central office be maintained in Chicago. Carried.

Dr. Weis then moved that the organization be made permanent and that Dr. W. A. Evans be elected as chairman, C. D. Pence as secretary and H. N. Moyer as treasurer. Carried.

Dr. Evans moved that Dr. Moyer be appointed to consult various attorneys relative to our work for the ensuing year and obtain propositions from them pertaining to the same, and to report to the other members of the committee for a mail vote. Carried. Expenses of the committee was then considered. No definite action was taken, but a general instruction to keep the expenses at the minimum was ordered.

A motion was made to have the minutes of this meeting published in the JOURNAL. Carried.

Meeting adjourned, subject to the call of the chairman.

W. A. EVANS, Chairman.

C. D. PENCE, Secretary.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular monthly meeting of the Adams County Medical Society was held August 13, at the Elks Club in Quincy, with Dr. L. H. A. Nickerson presiding, in the absence of the president and first and second vice-presidents. Those present were Drs. Beirne, Becker, Christie, Knox, Koch, Liesen, Montgomery, Nickerson, Rice, Roach, Rosenthal, Robbins, Shawgo, K., Shawgo, J. B., Wells, Williams, W. W., and Zimmerman. The following applications for membership were read and ordered to take the usual course: James F. Roach, Quincy; W. A. Garner, Clayton; J. R. Whray, Golden. Dr. A. J. Blickhan was elected to membership in the Society.

The committee appointed to draft resolutions on insurance examinations and contract work presented a resolution, which was amended as follows:

WHEREAS, a resolution, proposing an amendment to article II of the appendix, known as the "fee bill," by striking out the fourth line thereof and substituting therefore, "all examinations for life insurance be \$5.00," has been adversely acted on by the Society; and

WHEREAS, the prevailing opinion as obtained by conversation with individual members of the Society is that the strength of the Adams County Medical Society is not such as to enable it to carry out this ideal and greatly to be desired end; and seeking the obtainable and practicable rather than the ideal we, as a committee, therefore recommend that the fee bill wherein it affects the fees for life insurance examinations be left in statu quo, with the understanding that the maximum fee, \$5.00, named in the fee bill shall apply to all examinations for "old line" insurance.

Dr. Christie moved the adoption of the following amendment: That it be the sense of the meeting that the charge for all life insurance examinations should be \$5.00. This amendment was adopted.

In regard to contract practice, the following resolution was adopted:

Resolved, That it is derogatory to the standing of the medical profession and detrimental to the public health for any member of the profession to resort to competitive bidding to secure public, society, corporation, casualty company, college or school appointments or to contract for term service to societies, corporations, casualty companies, colleges, schools, families, or individuals for a fixed sum or, in other words, to take the chances of such societies, corporations, institutions, families or individuals having more or less or no sickness or casualties during such term; and be it further

Resolved, That the above resolution shall not be held to apply to any purely charitable or eleemosynary institution.

Dr. J. A. Koch, member of the Medical Defense Committee for Adams County, reported as follows:

I, your committee of one to give assistance to the secretary of the State Board of Health in the prosecution of the agent of the Viavi Remedy Co., wish to report that a warrant for the arrest of the agent, Miss Cecilia Mahoney, was sworn out by the local attorney of the Board, Emery Lancaster, and the trial set for August 11. The attorney for the Viavi Remedy Co. appeared in Quincy, on August 10, and offered to accept a fine and pay costs. After consultation with Dr. Egan at Springfield, he gave the Adams County Medical Society permission to either continue prosecution or permit the Company to pay a fine and costs and sign an

agreement by the agent to cease violating the law. On laying the matter before the first vice-president and secretary of the Adams County Medical Society, we decided on the acceptance of the fine and costs, the former amounting to \$35.00. Adjourned.

GEORGE E. ROSENTHAL, *Secretary*.

BUREAU COUNTY.

The twenty-fifth semi-annual meeting of the Bureau County Medical Society was held in the City Hall in Princeton, Thursday, May 10, 1906, with the following members present: Wm. Kaull, H. D. Steele, Georgia M. Snader, Wm. Keller, C. A. Palmer, C. C. Scott, O. J. Flint, F. C. Robinson, H. M. Owens, C. C. Barrett, M. N. Gernsey, M. H. Blackburn, B. F. Landis. Visitors present were: Drs. F. X. Walls, of Chicago; Persus White, L. H. Wiman, of Lamaille; and John Francis Lewis, of Depue. Drs. Wiman and Lewis made application for membership and were duly elected members of the society.

The minutes of the preceding meeting were then read and approved.

A communication from the committee representing the American Medical Association, in regard to subscriptions to the fund for the relief of physicians of San Francisco, was then read. It was suggested that the physicians act individually as they saw fit, and no further action was taken. A communication from the Childrens' Hospital Society of Chicago, in regard to an attempt to be made next year to have the State Legislature pass a bill for the establishment of a State Colony for Epileptics in Illinois was read, and referred to the Legislative Committee for action. Dr. Walls, being made an honorary member of the Society, with the right to take part in discussions, pointed out that the State of Illinois had no home for epileptics, and that there was a great need for such an institution and that, to succeed in this effort, the united efforts of the physicians of the State were needed.

A communication from the Fox River Valley Medical Association, expressing their disapproval of the common practice of preserving poultry and game in cold storage for indefinite periods, after removing the entrails, and urging the passing of an ordinance prohibiting the sale of such poultry and game, was read and referred to the Legislative Committee. A communication from the Pike County Medical Society, enclosing a resolution deprecating the proposed reduction in fees for medical examination of applicants for insurance, and urging the necessity of physicians holding to the standard price for making such examinations, was read. After some discussion, the following resolution was adopted:

WHEREAS, The Bureau County Medical Society feels that the proposed reduction in fees for medical examinations for life insurance applicants, is uncalled for, therefore be it

Resolved, That the Bureau County Medical Society goes on record as being opposed to such reduction.

The meeting then adjourned until 1 o'clock p. m. The afternoon session convened at 1:15. Dr. F. X. Walls, of Chicago, then gave a short talk on Infant Feeding. He said that most of the artificial foods should have no place in a baby's dietary, and that the only artificial food that should be used was cow's milk, which was not and could not be made the same as mother's milk, however modified. He pointed out that proteid matter was the element in cow's milk, which caused the most trouble, when modified for infant feeding. He showed, by various charts, the proper manner of modifying cow's milk for the feeding of infants at various ages.

Dr. F. C. Robinson, of Wyand, read a paper on the experience of a country practitioner. He made references to many amusing incidents, which had occurred in his long years of practice. Dr. H. D. Steele read a paper, the title of which was A Few Desultory Remarks. The papers of Dr. Kaull, on Hydrotherapy, and of Dr. J. H. Franklin, on The Relation of the Country Practitioner to the Specialist, were postponed until the next meeting.

O. J. FLINT, *Secretary-Treasurer*.

CHRISTIAN COUNTY.

The Christian County Medical Society met at Taylorville in regular quarterly session July 19, 1906. Twenty out of the fifty-two physicians in the county were present, making the largest attendance at any meeting since the organization of the society. Dr. E. J. Brown, of Decatur, gave an interesting talk concerning the meeting of the American Medical Association at Boston, and afterward read a paper on the Modern Conception of Bright's Disease and Its Treatment. Dr. Saling, of Stonington, read a paper on Cystitis. Dr. John H. Miller, of Pana, read a paper on the Prevention and Treatment of Typhoid Fever. The discussions were pointed and profitable.

The following new members were admitted: Ira E. Neer, Edinburgh; Fred Griffin, Morrisonville; C. O. Nelms, Taylorville; L. C. French, Stonington. The society adjourned to meet in its next quarterly session the third Thursday in October. D. D. BARR, *Secretary*.

COOK COUNTY.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held May 1, 1906, with the president, Dr. Otto T. Freer in the chair. Dr. F. B. Brawley demonstrated the suction method, as used in diagnosis in accessory sinus disease.

DISCUSSION.

Dr. William E. Casselberry:—I would like to ask Dr. Brawley how he manages to maintain a vacuum, when he gives a treatment lasting from half an hour to an hour, and whether he had a means of maintaining closure of the palate continuously for any length of time?

Dr. Brawley:—In speaking of Dr. Hollinger's apparatus, it seems to me the apparatus, such as I have described, is simple, so that nearly everyone who has the Victor motor and pump can use it. The only additional apparatus necessary is a few yards of rubber tubing and glass tubing to complete the outfit. Dr. Casselberry asked about continuous treatment. I find, in certain cases, that there is no difficulty in getting continuous suction; the velum seems to release during inspiration. It does not interfere with suction.

Dr. Ballenger said that he was afraid that this method can not be carried out for long-continued treatments. I do not recommend the method for long-continued treatments, because I have not had enough experience to talk about that phase of the subject, and as Dr. Ballenger's experience is so much greater than mine, of course he is more qualified to speak of the advantages and disadvantages of the method in that line.

Dr. Freer spoke about the use of a mask. I do not use a mask, for the reason that it is an expensive attachment; it has to have a pneumatic rim to it; it gets out of order easily and becomes smeared with the discharge. It is an unhygienic arrangement, and after you have finished treating a case in which you have used a mask, you have a ring of hyperemia in the nose like that of a drunkard, and in women this would be an objectionable arrangement to use.

REPORTS OF CASES.

DR. JOSEPH C. BECK.

EXOSTOSIS OF THE MIDDLE EAR.

Case 1.—The first case I wish to present is the one I showed in the other room, and it is a case of exostosis of the middle ear. The patient, a woman, presented herself June 22, 1905, with the following history: She has had tinnitus in her right ear and some loss of hearing, for a period of several months, for which she went to a specialist, who inflated the ear for a month or two. During this time, the symptoms present were not relieved, but became aggravated, and, finally, spontaneous perforation resulted, with a mucus discharge. About this time I saw her, and, on examination, found the mucous membrane of the inner wall of the

middle ear highly congested, with a mucus discharge from the ear, which was quite profuse. There was also marked diminution in hearing, during the few days she was under my observation. Ten days later, she developed mastoid symptoms, with pain in the back of the ear. I enlarged the perforation in the drum, with no result, and, noticing that the deafness was increasing rapidly, I decided to do a simple mastoid operation, which was done with a very gratifying result, in that the discharge ceased after two or three weeks.

An interesting pathologic condition, that developed in this patient about six weeks after the discharge stopped, was that more than two-thirds of the drum membrane disappeared, and at the floor of the middle ear, a new formation of bone sprang up, so that, in about six weeks, small portions of bone had formed. These particles of bone were hard to the probe and increased in size, until after two weeks they reached the size of a millet seed. They have not increased in size since then.

From a therapeutic standpoint, this case is interesting to me, because the symptoms are those of extreme tinnitus aurium and loss of hearing, and it is a question whether the removal of the exostoses from the middle ear will relieve those symptoms. I would like to get suggestions in regard to the further treatment of this case. I have instituted the usual treatment except operative interference.

SINUS THROMBOSIS, BULB AND THROMBOPHLEBITIS.

Case 2.—I wish to present a second case. The patient is a young man, 18 years of age, healthy parents, whose previous health was good until six years ago, when he consulted a physician on account of impaired hearing in the left ear. There was no discharge from the ear at the time. He was treated by douches. Four years ago he noticed a discharge from the left ear, but there was no pain previous to the discharge. The discharge became fetid and continued until February 18, 1906, when pain developed in the ear, after exposure to cold. The mother treated the ear with hot drops of oil; but the pain continued. The next day he called a physician, who recommended irrigation of the ear, and the application of a hot linseed poultice. During this time he developed a chill, followed by a temperature of 105°. The chills became more frequent until there was one every hour, accompanied with high temperature and vomiting. The condition lasted until February 24, when the discharge from the ear ceased, and the patient became delirious. I was called to see the patient at this time. On examination, I found a scant amount of purulent material in the external auditory canal, with a small perforation high up, involving the upper and outer wall of the canal, with considerable tenderness over the mastoid region. There was a swelling below the angle of the jaw, extending along the sterno-cleido-mastoid muscle. The pulse was 140; temperature 105°. I made a diagnosis of thrombosis of the left jugular bulb and acute exacerbation of chronic mastoid disease, with, probably, some necrosis of bone.

The patient was immediately transferred to the hospital and was operated on at 9 p. m. as an emergency case, without having had the necessary preliminary preparation. I did a radical mastoid operation, exenteration of the entire mastoid, the incision having been made down along the sterno-cleido-mastoid, and exposing the jugular vein for its upper third, or as far as it was thrombosed. I excised the vein as far as I could towards the jugular bulb, exposing the lateral sinus by making an incision, as recommended by Whiting, until I came to the free sinus, removed the clot and carried the incision as far as I thought necessary to reach the jugular bulb and the communication between the thrombosed vein. I packed the wound, and put the patient to bed. Temperature the next day was normal, and remained so for two weeks. Two weeks later he developed pain on the right side, at the base of the lung. This proved to be a pleuro-pneumonia. He recovered from this, then the left side became involved; similarly, there was rusty sputum. Examination of the sputum showed a great many pneumococci, so that this was a pneumococcal infection. About two weeks after the pleuro-pneumonia cleared up, this boy had a sudden chill, with high temperature, pain in the head and buzzing and loss of hearing on the right side. I anesthetized the patient the following

day, exposed the cerebellar and cerebral region for abscess, found none, removed the bone at these parts, and curetted thoroughly the old field of operation, leaving the cerebellar, as well as cerebral surfaces, exposed. This large cavity was packed and dressed daily, with a pleasant result following, in that the temperature remained normal, and the patient recovered, with the exception that there is, at this point, a small hernia cerebri, and, of course, the ear markedly sagging down. I did not slit the membranous canal in operating, owing to the fear of perichondritis or chondritis of the auricle. I took several x-ray pictures of the case to show the bony effect following the operation, and the hernia cerebri.

I want to mention the operation on the opposite side. I thought, possibly, there was some trouble in the opposite ear, so I opened up the antrum mastoidei and found it to be absolutely normal. I then allowed the cavity to fill up with blood clot, and sewed it up. We should not drain when we find no trouble, but sew up the wound and try to obtain primary union. Heretofore, when I have drained in this class of cases a long after-treatment has been necessary.

During the time the boy had chills and fever, I administered what I believe is of value in these cases of thrombosis, namely, glycogen hypodermatically in five-grain doses, and colargulum intravenous injections.

NECROSIS OF TEMPORAL BONE, WITH UNUSUAL FISTULA.

Case 3.—History: Miss H., 44 years old, with a good family history. Usual diseases of childhood. For the past ten years, has been suffering with marked headaches on the right side, back of her ear. I saw the patient with Dr. McLane about four years ago. She complained very much of the pain in her head, dizziness and tendency to fall to the affected side.

Examination: Hearing of the patient was reduced in the right ear to about one-fourth for conversational tone. Watch contact; Rinne was negative. Weber laterated to the right.

The tympanic membrane appeared somewhat thickened, but intact, except at the lower inferior quadrant. At the very periphery of the membrane was situated a small perforation, which, on inflating the middle ear, was found not communicating with this cavity. A small amount of pus, which had the odor of necrosed bone, could be wiped out. A probe introduced into this opening gave evidence of roughness of bone. On the side of the neck, along the anterior border of the sternocleidomastoid muscle, was a long scar, the result of spontaneous rupture of an abscess, which the patient says she had during childhood.

Diagnosis: Necrosis of temporal bone. An operation was advised and accepted.

In September, 1902, under general anesthesia, patient was operated on. The usual post-auricular incision was made, and the antrum exposed and found normal. Then the bony canal was chiseled off, going downward rather than upward towards the existing perforation or necrotic area. One will easily appreciate the apprehension of wounding the facial nerve in this procedure. On locating this focus of infection, we found necrosis apparently not very extensive, and, after thoroughly curetting, a plastic completed the operation. The result was but partially good, in that the headaches were less intense. A slight facial paralysis resulted, but cleared up very shortly. The dizziness, however, persisted, and, in fact, became worse. Patient then left the city and did not return until October, 1905, with about the same symptoms, only the headache was more aggravated and localized to a point back of the mastoid process, about the region of the sigmoid sinus. This point was so tender that patient could not lie on that side of her head and the palpation of it was very sensitive. On examining the ear, we found the hearing much reduced, and at the right of the original perforation was a small granuloma, touching which made the patient very dizzy. This symptom suggested labyrinthine necrosis. The hearing tests at this time showed a reduction in bone conduction, and the Galton whistle was not heard well in the higher registers. I concluded that there was still necrosis of bone, possibly greater than externally manifested, and decided to reopen and explore.

In November, 1905, the old post-auricular incision was reopened and carried

somewhat farther down the neck. From the upper limit of this incision, I carried another semilunar incision backward and downward toward the neck, making a flap, two inches wide, and three and one-half inches long, with the base at the neck, a sort of a hinge-shaped flap. Then I exposed the mastoid by peeling the auricle forward. The next step was to bring down this hinge-shaped flap, including the periosteum, exposing this very tender region spoken of above. By so doing, from an opening at the point just where the great tenderness existed, I obtained a hemorrhage, such as one gets on opening the lateral sinus. At first I thought of an emissary vein, but it proved otherwise. The periosteum that was peeled off had attached to it a small piece of bone, that corresponded to the bleeding opening and the bone looked diseased. On further examining the bleeding area, I discovered that it was the lateral sinus whose bony covering was necrosed, but that the sinus itself was in good condition. The next step was to expose the lateral sinus higher up, so as to compress it temporarily, thereby checking the bleeding, while exploring the diseased area. This was very readily accomplished and, to my surprise, I found a fistula leading from the above described necrotic area, namely, the bony wall of the lateral sinus, forward, downward and inward into the middle ear cavity, where I had found the granulating area, on inspection of the canal.

Leaving the probe in this position, I chiseled down on to it, and nearly through the facial canal, in that manner destroying the continuity of the nerve. The fistulous tract was thoroughly everted, three strands of silkworm gut were introduced as a drain, and the cavity was allowed to fill up with blood, which clotted and was not disturbed. The exposed lateral sinus was packed and drained, through a separate opening in the skin. The case was dressed on the third day, removing the silkworm gut drain, also the gauze from the sinus, leaving the blood clot undisturbed, in the canal and the middle ear. From that time on, only external dressings were changed, and, after two weeks, the posterior wounds were closed by granulation. After that, I noticed a remarkable difference in the wound in the canal and middle ear, in this case, from other cases, where I had been using gauze as a drainage, and, finally, when the last particle of dried blood was removed, the surfaces were almost entirely epidermized.

Result: The headaches and pains of the side of the head disappeared. Patient was able to lie on the right side of her head again. Dizziness disappeared. Hearing improved some. Complete facial paralysis.

[Note.—Since this case was presented I have performed an anastomosis between the facial and hypoglossal nerves to correct the facial paralysis. The method was an end-to-side anastomosis. It is now about one week since operation. The wound has healed by primary union, but, of course, I can not state anything as to the result at this time. I shall make a special communication regarding this plastic operation.]

Dr. Ira Frank:—I had the good fortune to assist Dr. Beck in the operation he has described, and, as he has said, in freeing the periosteum from the bone and pulling down the flap we thought at the time that we had ruptured the emissary vein. Dr. Beck, in following the fistula into the middle ear, spoke of severing the facial nerve, which was done intentionally.

Dr. George W. Shambaugh:—In regard to the exostosis shown in the first case reported by Dr. Beck, I can see no reason for expecting any influence on the symptoms the patient complains of by its removal. I see no reason for connecting these symptoms with the exostosis. The exostosis does not, apparently, spring from that part of the inner wall of the tympanum which is formed by the bony capsule of the labyrinth. It is the middle and posterior upper parts of the inner tympanic wall that are formed by the capsule covering the first turn of the cochlea and the vestibule. An exostosis in the lower anterior part of the tympanum is not connected with the capsule of the labyrinth. In the second case reported by Dr. Beck, where he removed a thrombosis from the sinus on one side and eventually operated on the opposite mastoid, I was not able to clearly understand his reasons for operating on the opposite mastoid. He stated that there was tinnitus in that ear, but I did not gather from his remarks whether there were

any local evidences about the ear pointing to probable suppurative disease on that side.

The third case reported by Dr. Beck is a very interesting one. I am inclined to believe that the bleeding encountered while lifting the periosteum from the posterior aspect of the mastoid was from the emissary mastoid vein, unless this vein was found at another point during the operation. If I understand Dr. Beck correctly, he found the lateral sinus involved and partially thrombosed on this side. A high position of the bulbous jugularis is not an infrequent occurrence, in which case this bulb encroaches on the lower posterior part of the tympanum just at the point where I understand the probe in this case entered the tympanum. It would be interesting to know whether the fistula in the bone through which the probe passed from the posterior aspect of the mastoid into the tympanum did not lead to a thrombosed jugular bulb, through which the probe passed before entering the tympanum.

Dr. Beck:—I would like to have Dr. Shambaugh explain why, after pulling back the periosteum, free bleeding from the sinus took place, if he does not think there was some necrosis over the region of the lateral sinus? In pulling down the periosteum over the posterior part of the mastoid the emissary vein of the mastoid would be torn, producing bleeding from the lateral sinus unless the sinus was completely thrombosed. A localized necrosis at the point of entrance of the emissary vein could, of course, be present and would conform with the history of partial thrombosis of the lateral sinus.

As I tried to report these three cases in as short a time as possible, I perhaps did not make myself clearly understood. If the gentlemen had seen the cases referred to when operated upon they would have understood them better. In Case 3 the opening in the middle ear was situated low down, posteriorly, on the floor. The posterior part of the middle ear was rough to the touch of the probe. There was fetid pus, but no bleeding from that point. The operation consisted in exposing the tender point back of the head. I made a tongue-shaped flap, so that the apex of the flap was upward, and in pulling it down free bleeding occurred, a portion of the bone or sequestrum having been found attached to periosteum. There was necrosis over the region of the occipital bone back of the mastoid process, where we would expect to find the sinus as it turns down. The question at the time of operation was whether it was the emissary vein, but we found the sinus further back, and by compression stopped the bleeding. In exposing the sinus I inserted a probe into the former bleeding point and followed right down to the middle ear. Therefore there was a fistula that led from this necrotic spot about the lateral sinus to the middle ear. I exposed the fistula until I came to the middle ear, and there was no bleeding at that point. That was not the jugular bulb, but simply a fistulous tract.

Dr. Shambaugh:—You had thrombosis to deal with?

Dr. Beck:—No. I had necrosis about the sinus, with a fistula into the middle ear.

In regard to the remarks made about the operation on the opposite ear in Case 2, I will say that in a case of this kind, where the life of the patient is at stake and where symptoms are present, as deafness and tinnitus aurium, with symptoms of chills and fever, we do not hesitate to open the opposite mastoid, even though the drum is perfect. It was a dull-looking drum. There was a possibility of the patient having trouble in the mastoid without any evidence of it in the canal. We know that such conditions are described, and that was my reason for opening the opposite mastoid while the patient was under an anesthetic.

Concerning the scar to which Dr. Holinger referred, this patient (Case 3) has a keloid scar along the anterior incision—another interesting pathologic condition in this case.

Dr. John Edwin Rhodes reported a case of xanthoma multiplex, in which there were interesting throat complications.

CRAWFORD COUNTY.

The twenty-sixth annual meeting of the society was held at the office of Dr. Frank Dunham, in Robinson, July 12, 1906. The following members were present: Drs. T. N. Rafferty, I. L. Firebaugh, A. G. Meserve, Frank Dunham and H. N. Rafferty, of Robinson; C. H. Voorheis and J. B. Cato, of Hutsonville; J. W. Kirk and J. M. Mitchell, of Oblong; C. E. Price, of Eaton; LeRoy Newlin, of Hardinsville; S. A. Smith, of Annapolis; L. R. Illyes, of Heathsville; J. E. Midgett, of Flat Rock; J. A. Ikemire, of Palestine, and R. S. Johnson, of West York.

The report of the secretary for the closing fiscal year was as follows:

Number of meetings held during year, 6; number meetings missed during year, none; largest attendance at any one meeting, 19; average attendance for fiscal year, 15.7; average attendance for previous year, 9; number paid-up members, 20; amount funds received from all sources, \$50; amount forwarded to E. W. Weis, secretary state society, \$30; amount paid C. Barlow, treasurer Crawford County Medical Society, \$20; expenses of secretary for year, \$4.54.

The secretary reports with pleasure the increased interest shown in the work of the society by the individual members, as manifested by the number and class of contributions and by the increased attendance at the meetings. The two important events in the life of the society during the year were the public meeting devoted to the consideration of consumption and the recent entertainment of the Æsculapian Society, both of which were successful beyond expectation.

The report of the treasurer was read by the secretary in the absence of Dr. Barlow. On motion both of these reports were accepted and placed on file. Officers for the ensuing year were elected as follows: President, L. R. Illyes; vice-president, J. M. Mitchell; secretary, H. N. Rafferty (re-elected); treasurer, Frank Dunham; censors, C. H. Voorheis, A. G. Meserve and J. E. Midgett (all re-elected). Dr. J. W. Carlisle was presented as a candidate for membership. It was suggested that application be made in writing, in conformity with our constitution and by-laws, and referred to the board of censors.

It was moved and carried that the society pay the dues of its secretary to the county and state societies and to the American Medical Association, and that a standing order be drawn on the treasurer for this purpose. The committee on arrangements for the meeting of the Æsculapian Society, recently held in this city, made a final report through its chairman, Dr. H. N. Rafferty. On motion the report was accepted and the committee discharged.

Cases were reported as follows: Foreign body in the bladder, J. M. Mitchell; breast tumor (probably carcinoma), J. W. Kirk; fracture of vertebræ, I. L. Firebaugh; fracture of vertebræ, H. N. Rafferty; Hodgkin's disease, T. N. Rafferty and I. L. Firebaugh; two cases for diagnosis, T. N. Rafferty. Dr. J. B. Cato read a very able and timely paper on The Business Side of Medicine, which was discussed by nearly all present.

The president, Dr. Frank Dunham, then delivered his annual address.

PLEASURES AND PASTIMES.

The universe, of which this earth is a part, is a scene of restless activity. Wherever we bid our minds turn or our eyes look, we find evidences of tireless motion. The rivers rush down the mountainside, flow across the plains to join the heaving, billowy ocean. The winds blow hither and thither, wherever they list, over the face of the earth. The earth itself is twirling in space at such a rapid rate as to challenge our sense of wonder, while myriads of stars, at which we gaze awe-struck as they gleam and glisten on the breast of night, also move through space at rates of speed so tremendously great that the average layman looks askance at the figures presented for his consideration. Through the realm of Nature we find motion to be a primary condition of life. In the cemetery, where death is king, there is little onward movement. Active change, forward motion, restless energy are all normal with living Nature. Where the frosts of death have, with icy fingers, congealed life, we find inactivity, rest, quiescence.

Man seeks to imitate Nature. Most of the great machines invented by the

genius of man are the result of the attempts on the part of man to imitate Nature's methods. Even man's efforts are largely the result of his observation of unresting Nature. What ceaseless activity is in the realm of Nature, labor is to mankind. Man's work has transformed the desert into a blooming garden. It has made the crooked straight and the rough places smooth. It has leveled mountains and filled in valleys. It has united continents and has bound the ends of the earth so that they feel the instantaneous throb of electric force. It has made the ocean his servant and the forces of Nature it has yoked to do his will. It has taken rough, unhewn objects and endowed them with grace and beauty. It has constructed cities and made them the abode of universities and colleges, schools and libraries. It has made life desirable and home adorable. Man's work has bound the human family of every creed, color, country and condition into a whole; and, while many still presume to ignore the uniting link, dwelling chiefly on the missing link, yet by the influence of man's work the irrefragable tie of human brotherhood will yet be recognized and the human family will yet assemble around the altar of the one God as children gather about the table of their parent.

Man's work has made Nature subject to him; but only too often man has become the slave of his work. Especially is this true in America. Work, which ought to be the source of great blessing; work, which ought to be the salt of existence; work, which should give zest to the limb and zeal to the mind, strength to the body and force to character, is to-day the tyrant which subjects man to its whim. Work, which should be an agent controlled by us, becomes the actor controlling us. We, as American people, are impressed with the necessity of hastening to get rich. We, who can not boast, as can many European families, of pride of ancestry, are so anxious ourselves to become ancestors of wealth that we have no time for anything but work. Our flag proclaims us free men, but our work proclaims us slaves. Our work is our master and we are its servants. Max O'Rell, when he came to the United States, was more impressed by the notice on so many doors: "Gone to lunch; back in five minutes," than by any other single notice that came under his attention.

We have so much to do that we have little time to spare for the needs of soul and body. There is a splendid motto in the Talmud which says: "Whosoever walks a single path endangers his soul." At first sight the profound wisdom of the adage may not be clear; but it signifies that he who permits his mind to follow a solitary line of thought becomes ultimately a slave to that thought. He may rise in the majesty of a glorious activity and seek, finally, to throw it off, but, generally speaking, it would be as though a child would seek to stem the river's current with its finger. He who walks a single path, who takes a single view of life, be it religious, political, social or economic, and follows that path or view to the exclusion of all other possible views or paths, endangers the welfare of his soul and body.

The man who is a slave to work, who finds no time for diversion, no opportunity for recreation, which is re-creation, no occasion for relaxation, no period for recuperation, endangers his moral as well as his physical health. Work is a necessity to the fullest development of character. But play is also an element in the divine economy of human growth. Work is needed for the maintenance of society; so, too, are pleasures and pastimes.

There lived in the City of New York a millionaire by the name of Russell Sage, chiefly famed for the length, slenderness and security of the stocking in which he kept his wealth. Mr. Sage was a great example of industry and of economy. His theory of life was that man is a machine for the accumulation of money. The heights, the depths of life, its sweetness, its poetry, its passions, its enjoyments were lost to Mr. Sage. He believed that they should be lost to all the world. Literature and art were nothing to him. Civilization and humanity were nothing to him. To his eyes man was a machine, made for the accumulation of money and nothing more.

This poor millionaire applied this doctrine to his own life and to that of all the rest of the world, his narrowness being thus incredible. He stated that in all

his life he never took a vacation, nor did he think that any one else should do so. He said that an employé who asks for a two weeks' vacation is as unreasonable as would be the employer who asks two weeks' work without pay. He regarded a vacation as a gift, a charity, but as such very much to be deplored. This penurious utterance of this penurious and poverty-smitten millionaire gains nothing in response by man's pity.

The years dealt ill with Russell Sage. His theory worked out to the end and ruined him. It is too late for all his money to buy back his manhood, his charity, his touch with humanity. He died as he lived—a failure. I pose as the exponent of no fad and the advocate of no doctrine of extremes. My aim is to be simply sane and fair. As well as the next do I hold up before the youth of this land the doctrine of success, and success at the cost of every honest effort, at the cost of rigid self-punishment and self-denial. At the same time the good common sense of which we trust Providence has given as a little would forbid us from teaching the youth of this country that success in life means merely the accumulation of money. I deprecate the labors of these professional maxim-makers who din into the ears of our youth the doctrines of industry and economy, of self-repression, of self-abasement, who seek to make manhood by means of the printed page. I rebel at the theory of industry and economy and nothing else. I decline to entertain that theory of life which gives us a millionaire at fifty, but a millionaire who can not walk, who can not ride, who can not eat a beefsteak.

All America is running hard and fast into commercialism. We have held up to the admiration of the public the so-called success of men, young and old, who have made large sums of money. Their sayings are quoted, their deeds exploited. They are erected into idols for the American man to worship. As for me, I worship none such. I cherish, in spite of the commercial tendencies of these times, in spite of the money-mad, delirium-smitten, false idols of these days, rather a standard of manhood of my own. The manhood of America, the achievements of America, did not grow under the doctrines of Russell Sage nor any other delirious advocate of wealth alone. It was founded in the glorious American out of doors. It will flourish in that out of doors, and will flourish there alone.

A vacation grudgingly taken is to my mind an admission of national slavery. I do not believe in a national slavery, but in a general and national manhood. I do not believe in Russell Sage, but I do believe in the out of doors. The more of it there is possible in good business honor and in good personal conscience the better for all concerned: the better for employé and employer, the better for business and for success, and hence the better for civilization and America. I do not believe that men were put on earth to be miserable. I do not believe in any religion which preaches that gospel, nor in any business creed which insists upon it. I believe that the world was made for sunshine and happiness and that humanity was made for growth and development. It will never grow to its best stature when imprisoned within four walls. There is a bigger and a better world in America than that occupied by Russell Sage. There are better American ambitions than his.

Doctrines such as his mean oppression. Oppression comes in time to mean revolution. The mad commercialism of America against which I protest and rebel means human revolution in time, if it shall find no check. Before and after revolution there will remain the common sense of humanity, which knows full well that the greatest success of all is to be a man. Work is the purposeful direction of physical energy to attain certain ends, the conscious application of intelligent will for the attainment of well-defined objects. We want certain things or desire certain conditions to prevail. We set about getting them. We work for them. Pleasure is the haphazard seeking after certain ends to help pass the time. The importance of work is that it is a grave factor in matters affecting our lasting progress. The characteristic of pleasure is that its object is only temporary; it desires to please for the moment. Work is the bent bow; pleasure is the unstrung instrument. The bee is the symbol of work; the butterfly the emblem of pleasure. The bee works with a definite aim; the butterfly appears to desire nothing more than to enjoy the moment, to pass the time. We need pleas-

ures as much as we need employment. It is as essential that man should seek proper modes of pleasure and pastime, amusement and enjoyment, as that he should strive for a livelihood. We see this well impressed by Nature's methods in the life of every healthy child. The child takes to pleasures and play as normally as the duck takes to water; and the child takes to play because in its pursuit of pleasure it is preparing body and mind for the duties of life. Every time we see a fulfillment of Zachariah's vision of "little children playing on the streets of the city," every time the child seeks the pastime characteristic of childhood it is unconsciously storing up energy for its future well being. In all of its games in which running, for example, plays an important part it is strengthening its limbs, developing its muscles, aerating its blood, building up tissue and helping to remove the more readily the waste products of its system. The child does not know this, but we do. The child in seeking pleasure is following a natural impulse for the preparation for the future energies of life. Now what play is to and for the child, pleasures and pastimes are for their elders, and as the child's play works definite ends, so should our pleasures.

I have great fear of those people who think that life must be viewed as the preparation for our funeral. There are men and women in this world who practically tell us that a smile on the face is an insult to God, that a laugh is a crime and that to be happy and bubbling over with joy is an invention to call down upon ourselves divine indignation. There are people in the world who really believe that it is an infringement of God's laws to be happy; that man should go through life mournfully and with that kind of facial expression appropriate to the house of death; that all the words we speak should be uttered in that peculiar funeral tone which we associate so often with the pulpit. I am always on my guard against that kind of people. I fear them. I regard them, from the character of their lives, as the most thoroughgoing hypocrites on earth. They are always telling how God says, "If a man smite thee on the right cheek, turn to him the other also." But they are always telling it; it is not what they themselves are doing. They are always pointing out how the law of God will afflict and punish in case one should have the misfortune (?) to be of a merry or happy disposition. I believe that every smile that suffuses over our face because of honest enjoyment is a psalm of gratitude to God, and every peal of laughter, rung from a pure source, is a hymn of praise.

The good God who discriminated between man and brute gave man, of all animals, the sole right and power of laughter. I believe there is more religion, good, sound religion, in one hour spent in pure happiness than a whole day spent in the sackcloth and ashes of melancholy misanthropy and in the false fervor of a funeral character. You may ask, "What would you recommend as the best pastime of life?" I would answer that, independent of such joyous experience as the pursuit of art and the drama, independent of a proper appreciation of the value of such exercises as field ramblings and outdoor sports generally, independent of such pleasures as social intercourse and friendly society, which should form the spice and not the food of life, the dessert and not the whole meat, independent of these and other exercises that tend to strengthen and develop the body, we should give some time to those things that strengthen the mind and soul. There may be many who laugh at such things as spirituality and idealism. We may scoff and sneer at a man who teaches us that we are not brutes, but children of a moral God, but in our heart of hearts we would not want our children taught that they are brutes, and if they are not to be so taught, then we, the parents, must see that they, being the children of God, children of the Spirit, shall rise and be brave, shall stand forth as noble and good.

In order that this may be done, I recommend as a preparation for the best and highest pastime of life the development of the love for books. No man who has made a friend of books has ever lived to repent his friendship. No man who has a library in his mind has ever lived to regret that he came in contact with the princes of the earth. For by the power of books we touch hands with the kings and princes of men. If we love books, Moses speaks to us; he is our familiar friend; Isaiah repeats for us his wondrous prophecies, Jesus delivers parables and

Paul is an active presence. If we become readers we may see standing before us a man like Marc Antony, urging the Roman people to avenge the death of the fallen Cæsar, and may hear the golden words coming from the mouth of a Savonarola; we may hear Luther arguing against the vicious forces of organized society. If we love books we may shake hands with Jefferson, be the personal friend of Lincoln, and McKinley becomes our friend for the time being. Books are the great levelers of society. In the republic of the book world kings and princes and paupers are all equal. Then, at times, we should endeavor to find our pleasures in touch with Nature. Nature is the greatest teacher that man has ever met face to face. Coming in contact with Nature strengthens, sanctifies, uplifts and rejuvenates. There is not a bird that wings its way through a pathless atmosphere, there is not a leaf that adorns in emerald hue the trees of the fields but comes to us with a sweet, unlifting, ennobling lesson. Pleasure we need, pastime we need, but let not our pleasures be without knowledge, nor our pastimes without Nature's uplifting help. There is much wisdom outside of books, but more inside them. There is much enjoyment outside of Nature's beauties, but more to be found in them.

True parents will find their pleasures nearest home. We shall find them in such occupations that we and our children can mutually indulge in them. We shall find them where a wife's smile makes the most beautiful picture and children's voices make the sweetest music. Much pleasure may be found outside of home and the company of our nearest and dearest, but the noblest, highest and best will be found in those pastimes in which parents can have their children join them, so that together they praise God as they play and worship Him because they realize the duty of pleasure and find pleasure in duty.

EDGAR COUNTY.

The Edgar County Medical Society met in the Carnegie Library at Paris, July 25, at 2 p. m. Members present were Drs. W. A. Buchanan, F. G. Cretors, J. W. Evinger, G. W. Fuller, G. H. Hunt, W. H. Hoff, R. S. Lycan, C. S. Laughlin, G. O. Laughlin, A. K. Moseley, T. C. McCord, J. T. Musselman, D. D. Roberts, A. W. Slaughter and W. H. Ten Broeck. After routine business was transacted, Dr. D. D. Roberts presented a case which was diagnosed sclerosis of the brain and spinal cord by Drs. Buchanan, Evinger and Lycan, who were appointed by Acting President Dr. F. G. Cretors. The papers read at the afternoon session were: The Tongue as a Diagnostic Factor in Disease, D. D. Roberts; Early Diagnosis of Pulmonary Tuberculosis, W. A. Buchanan; Pulmonary Tuberculosis, W. H. Ten Broeck. These papers were discussed at the evening session which was held in the City Hall.

W. H. TEN BROECK, *Secretary*.

THE TONGUE AS A DIAGNOSTIC FACTOR IN DISEASE.

D. D. ROBERTS, M.D.

PARIS.

It would be very desirable if exact methods could be used to reduce the indications of the tongue to the same degree of accuracy as the analysis of the urine or the examination of the blood. While this is not the case, there is doubtless much in the teaching and experience of the older physicians which can not be put on paper; nor should it be too lightly valued by the physicians of to-day. We will try to give a few of the diagnostic signs of the tongue, which were landmarks when some of us began the practice of medicine. We will say nothing of the anatomy or nerve supply of the tongue, but will try to observe some of its diagnostic signs. Slowness of protrusion indicates an adynamic condition and, when combined with trembling, is an indication of exhaustion as well. Trembling and clumsiness may be the precursor of paralysis, as glosso-labio-pharyngeal. The tremor of typhoid may be distinguished from that of the paralytic in that the tremor of the typhoid is seen only on protrusion of the tongue, while that of the

paralytic is seen when the tongue is at rest. The volume is due to excessive coating, to flabbiness of the muscular tissue or to relaxation, or from faulty hygiene of the organ itself. It may be from general conditions, as edema due to obstruction of the venous circulation, or from disease of contagious structures, as the tonsil.

Dryness may be due to the fact that the patient breathes through the mouth, or may indicate a general deficiency of the organs of secretion. In the latter case, it is a most valuable index to the general condition of the system.

The color of the tongue speaks of various conditions. A white tongue indicates stomatitis, while a yellowish pearly color, which is thought to be due to the elimination of tauricholic acid from the salivary glands, indicates a bilious and jaundical condition of the system; large red papillæ showing through a white coating is an indication of scarlet fever, measles or influenza, while a livid and blue tongue is an indication of mechanical obstruction to the flow of venous blood; a grayish white tongue with here and there a red spot is a symptom of gastric or gastro-intestinal trouble, while in children a red tip should lead us to look for tenia. The coating of the tongue is composed of epithelium, micro-organisms and remains of food, and it is reasonable to suppose that some of the food particles come from the stomach. In affections of the liver and duodenum, the color is a yellowish white, and this color is seen in malarial fever with congestion of the liver.

In simple malaria, we have a thickened tongue with a yellowish fur. This coating is arranged in lines parallel to the circumvallate papillæ and show in two well-marked lines, like serried ranks or rows of papillæ at an obtuse angle to the median raphe or center of the tongue. There are usually indentations made by the teeth on each side of the tongue. There is an endemic type of tongue which is due to drinking impure water, to acute diarrhea, dysentery, ptomain poisoning, or to fermentative processes so often seen in intestinal diseases. One of marked interest is a large flat tongue fissured at times, but with a light furring, at other times angry and beefy and greatly irritated. In my opinion, this tongue is found in patients who eat large quantities of rich food and drink alcoholic liquors.

While this paper is short and very incomplete, we can say with confidence that the color and appearance of the tongue are still adjuncts in diagnosis which must be reckoned with even in this progressive and enlightened age.

JO DAVIESS COUNTY.

The Jo Daviess County Medical Society held its regular quarterly meeting in the parlors of the Warren Hotel, Warrén, July 12, 1906. The president called the meeting to order and the following responded to roll call: Drs. Stafford, Smith, I. C., Godfrey, Miller, Bench, Phillips, Keller, Tyrrell, Bucknam, Birbeck, Smith, D. G., Best, Nadig Kaa, Kreider, and Kolb of Apple River, and Percy of Galesburg as visitors. Minutes of previous meeting read and approved. The censors failing to report the applications of Drs. Gottral and Renwick, they were held over for the next meeting. An application of F. K. Kolb of Apple River, was read and received. Dr. Phillips then read a very excellent and well prepared paper on How to Live Longer.

Dr. Percy, president of the Illinois State Medical Society, then read a paper on The Borderland of Insanity, which gave the members many valuable points on this dreaded and difficult subject. After dinner, which was supplied by the Warren Division, Dr. Percy again took the floor and gave a lengthy and edifying talk on the work of the State Society, as well as the value of the necessity of vacations, travel, sociability, and post-graduate work, together with the physician's being a unit in promoting legislation. A vote of thanks was tendered Dr. Percy for his presence and valuable aid. The question of Life Insurance Fees was taken up and, after a full discussion, the president appointed a committee of three, Dr. Tyrrell, Kreider and I. C. Smith to draw up resolutions and have every member subscribe his name thereto.

The following is the report:—Owing to the reduced fees that the Insurance Companies have been imposing on the physicians of this country, the Jo Daviess County Medical Society, in regular session, assembled in Warren, Ill., July 12, 1906, passed and subscribed to the following resolution:

Resolved, That we, the undersigned, members of the Jo Daviess County Medical Society, and any other reputable physicians of said County, do hereby agree by subscribing our names to the following resolution: That we will not make an examination of any old line Life Insurance Company for less than Five Dollars (\$5.00) or for any mutual or fraternal Insurance Company for less than Two Dollars (\$2.00) and that any physician who would violate this resolution, should be deemed unworthy to be met in council.

Everyone present signed the above and those not present will be given an opportunity. Next meeting will be held in Galena, in October.

D. G. SMITH, *Reporter*.

MC'LEAN COUNTY.

The July meeting of the McLean County Medical Society was held at the City Hall at 8 p. m. July 12, 1906. Meeting was called to order by President Bath. Minutes of last regular meeting were read and approved. Dr. Mammen moved that the question of delegating business of Society to a committee be laid over until September meeting. Seconded and carried.

Dr. R. D. Fox reported for the Sanitary Committee on the larger dairies:

	No. bacteria present.
Sanitary Dairy	93,000 to 298,000
Snow & Palmer.....	89,000 to 136,000
Snow & Palmer; hospital samples.....	86,000 to 100,000

Pasturization reduces number bacteria.

No supply is ideal. There is some sediment present. Conditions must be improved. Solids and butter fat are not bad.

Dr. Whalen, Health Commissioner of Chicago, was then introduced and read a very excellent paper on the Influence of Sanitary Measures on Mortality. He stated that the registration reports of Chicago divide the causes of death into three classes: those from disease, 92 per cent.; from violence, 1 per cent.; from ill-defined causes, including old age, 7 per cent. As there are few deaths from uncomplicated old age, the greater part of class three may be added to class one, making the number of deaths from disease 99 per cent. The dangers arising from contaminated ground are due to the fact that air penetrates the soil to a depth of 20 to 30 feet and that there is a circulation of the ground air and surface air, the former also forming a part of air we breathe. Hence the importance of a dry site for dwelling, which gives light and cheerfulness; a ventilation sufficient to carry off impurities; a system of immediate and perfect sewerage removal; a supply of pure water, with proper removal of same, insuring perfect cleanliness of all parts of house; a construction of houses which shall be absolutely dry from foundation to roof.

The speaker emphasized the value of concrete floors to prevent the exchange of noxious gases from soil below. As the best proof of the possibilities of improved sanitation, Dr. Whalen stated that from that source alone the expectancy in Chicago had been increased nearly 16 years and that now one-fourth of all deaths might be prevented by improved sanitary methods.

Dr. Whalen was accorded a vote of thanks by the Society. After some discussion the meeting adjourned. Members present were Drs. Sloan, Fox, A. L. and R. D., Smith, Lee, Smith, G. R., Little, Chapin, Welch, Yolton, J. L. and R. C., Hart, Mammen, Vandervort, Bath, McCormick, N. K., Rhodes.

T. W. BATH, *President*.

O. M. RHODES, *Secretary*.

The August meeting of the McLean County Medical Society was held at the residence of Drs. J. L. and R. G. Yolton, on the evening of August 2, the council

chamber being occupied by another meeting. Owing to the delay consequent on changing the place of meeting, the regular business of the Society was deferred, and the speaker of the evening introduced.

Hon. John L. Sterling, Congressman from the Seventeenth District, addressed the Society on The Pure Food and Meat Inspection Laws. He said that originally the trade between the states was intended to be free, consequently Congress should have power to regulate commerce between states. As a result of this there has arisen the Oleomargarine Law, the R. R. Rate Bill Law, the Pure Food Bill, the Meat Inspection Bill, etc. There is a tendency to give Congress more power. The provision of the law is to improve foods and prevent mislabeling. Congress now has full power in District of Columbia, territories and between states. The purpose of the pure food laws are to benefit public health, to improve morals, and to prevent sale of habit-forming drugs, without knowledge of consumer.

The speaker read a long list of patent and proprietary remedies which conflict with the standards of strength and purity established by the Pharmacopeia and National Formulary or which were mislabeled. He also spoke of methods commonly used to adulterate such foods as milk, sugar, coffee, rice, meat, baking powder, tea, olive oil, honey, etc., etc. A manufacturer can now sell his goods within the state manufactured, but can not ship to other states, without making himself liable. There are \$3,000,000 appropriated annually for the inspection of meat. The law provides that every animal must be inspected on the hoof at time of slaughter. Inspection of the carcass and of the package and can is also provided for. Must then be tagged, inspected and passed.

It was formerly supposed to be inspected and guaranteed by the government, but such was not the case. The sanitary conditions of packing houses must be improved. The Secretary of Agriculture has power to see that above improvements are made. On motion, a vote of thanks was extended to Mr. Sterling for his address. Adjourned.

T. W. BATH, *President*.
O. M. RHODES, *Secretary*.

MENARD COUNTY.

The Menard County Medical Society had a meeting July 19, 1906. Dr. Hole read a paper, the title of which was

ACONITE, VERATRUM AND DIGITALIS.

The above are three of the most potent, as well as the most useful of the vegetable members of the *Materia Medica*. *Aconitum Napellus* is natural in Europe, Asia and America. The root is dark in color and resembles, to some extent, horseradish, and also has some resemblance to celery. When chewed it produces a feeling of tingling and numbness on the tongue and lips. The active principle is an alkaloid, aconitine, freely soluble in water, alcohol and ether. There are three or four other alkaloids, but, as yet, they have not been sufficiently investigated to determine their value.

Physiological action: Aconite is a powerful depressant to the circulatory system, it slows the heart by stimulating the peripheral vagi and lowers blood pressure by directly depressing the heart through its motor ganglia.

It slows respiration by its direct depressing effect on the respiratory center. It acts as a sedative to the stomach, and, frequently, lethal doses do not cause vomiting. It reduces the temperature by increasing the activity of the skin and glandular system, thus increasing heat dissipation.

Toxicology: Slow weak pulse, later becoming rapid and irregular, respiration slow and feeble, tingling and numbness of the lips, tongue and extremities, sub-normal temperature and collapse. The heart is arrested in diastole.

Therapeutics: Useful in the early stages of all acute inflammatory diseases, especially when of asthenic nature; in the acute infectious diseases of childhood; sometimes useful in acute hypertrophy of the heart, without valvular disease; in all conditions of increased arterial tension, in which there are no organic

changes in the heart or its valves, as a diaphoretic and antipyretic, in neuralgia internally and locally. In order to get full therapeutic effect, it is necessary to push to slight physiological effect.

Veratrum Viride: The dried rhizome and root of *veratrum viride*, American hellebore, is a stout rich, perennial herb, luxuriant in swamp lands in Eastern North America. Its active principles are the alkaloids. Proto veratrine is the most important. It is practically insoluble, and its uses are the same as the crude drug. Jervine, which is one-half the alkaloidal strength of the *veratrum*, is soluble in the alcohols and chloroform. There are three other alkaloidal constituents, which are physiologically inert.

Physiological Action: It lessens the force, tension and rate of the cardiac contraction by its depressing effect on the vasomotor centers and the heart muscle itself, and by stimulating the inhibitory nerves of the heart. The respiration is affected in the same manner, but to less degree than by aconite. It is irritating to the stomach, and, frequently, medicinal doses will produce nausea and vomiting. In large doses it is emeto-cathartic.

Toxicology: The toxic dose causes nausea and vomiting, slow weak pulse, vertigo, impaired vision, slow breathing and great muscular weakness. Death results from asphyxia or syncope.

Therapeutics: In excessive hypertrophy of the heart, without valvular lesion, in aneurism with much pain and a full and strong pulse, it may be used as a cardiac sedative and febrifuge in the beginning of any of the acute inflammatory diseases, is highly lauded by some systems of medicine as a remedy for croupous pneumonia; it is also useful in puerperal eclampsia and acute mania. The alkaloid veratrine, which is a combination of the active alkaloidal strength of *veratrum*, can be used internally as well as the crude drug, and it is also used locally in ointment for acute superficial neuralgias.

Digitalis Purpurea: (Foxglove, dried leaves collected from plants of the second years' growth, at the commencement of flowering). *Digitalis* is a biennial or perennial herb of Central and Western Europe, and is largely cultivated as a garden flower, as well as for its medicinal properties. The alkaloids of the leaves are digitoxin, digitophyllin, and digitalin. The German digitalin is a mixture containing about 50 per cent. of digitonin, an alkaloid obtained from the seeds of *digitalis*, and 5 or 6 per cent. of true digitalin. The alkaloids of *digitalis* are soluble in water and in 98 per cent. alcohol.

Physiological Action: It slows the pulse and raises the blood pressure. The lengthening of diastole is the cause of the slowing of the pulse and the longer diastole is due to the stimulation of the vagi. The blood pressure is increased by the direct action of the drug on the blood vessels and the stimulation of the vasomotor center.

Digitalis affects respiration only in toxic cases, and then it slows the rate. Large doses frequently cause nausea, vomiting and diarrhea. There is no noticeable diuretic action from *digitalis* in health, but when urine is scanty from low arterial tension, *digitalis* often produces free diuresis. It is not thought to have any specific diuretic effect on the renal epithelium.

Toxicology: Nausea, obstinate vomiting, disordered visions, headache, slow, full pulse, later rapid, thready and irregular pulse, sometimes, at a late period, there are convulsions. Occasionally, there is poisoning from the cumulative effect. After having administered *digitalis* for a long period, the first symptoms are precordial distress, occurrence at the wrist of the heart beats in couples, and irregularity of the pulse.

Therapeutics: Stevens says that *digitalis* fills three very important offices: First, it is a powerful cardiac stimulant; second, it slows the heart and regulates the rhythm; and, third, it acts as a diuretic. *Digitalis* is useful in all conditions in which toning and stimulating of the heart and arterial system is indicated, in irritable heart, in venous engorgement, dilated heart, and all valvular diseases of the heart, especially those in which there is regurgitation. It is said to be of but little value in aortic regurgitation, and to be contraindicated in aortic stenosis, and of no value or very limited value in stenosis of any of the cardiac orifices.

In exophthalmic goiter, digitalis sometimes lessens the frequency and quiets the tumultuous action of the heart. In cardiac and renal dropsy it is a valuable diuretic. It is often used in pneumonia as a cardiac tonic, and is also used in any or all acute or chronic conditions, in which there is heart weakness. Potter says that digitalis is especially applicable to the blonde, and to those of sanguine and indolent temperament. By way of comparison and contrast, I have tabulated the physiological action of the three different drugs on the heart and circulatory system, the respiration and the digestive system.

Aconite: Slows heart by stimulating vagi; lowers blood pressure by directly depressing heart through its motor ganglia. Slows respiration by direct depressing effect on respiratory center. Acts as sedative to stomach and frequently toxic doses do not cause nausea.

Veratrum: Lessens force, rate and tension of cardiac contraction, by its depressive effect on the vasomotor system, and by stimulating the inhibitory nerves of the heart. Acts directly on the respiratory center, slowing the heart, but to less extent than aconite. Irritating to stomach; medicinal doses frequently cause nausea, and large doses are emeto-cathartic.

Digitalis: Slows pulse by lengthening diastole, longer diastole due to stimulation of the vagi, blood pressure increased by direct action of drug on blood vessels and stimulation of the vasomotor system. Medicinal doses do not influence the respiratory rate, but toxic doses slow the rate. Large doses frequently cause nausea, vomiting and diarrhea.

In this very superficial examination of these remedies, one is impressed with the similarity of the action of aconite and veratrum, but sees clearly the very different physiologic manner in which each accomplishes its purpose, also how differently one should rationally apply them for results in a given case and condition. The very different, almost diametrically opposite physiological effects and therapeutic results of digitalis are also apparent. Personally, I am much impressed with the fact that I do not know as much physiology, materia-medica and therapeutics as I should know to be as successful as I have an ambition to be in the rational application of medicines in abnormal conditions. The thought also comes to me that there are four very essential elements to success, in the rational practice of medicine: that we have, at least, a working knowledge of physiology and anatomy, in order to be able to know the normal and its very many and wide variations; that he have a thorough knowledge of the pathology of the diseased condition which we are treating; that we have an intimate knowledge of every drug we use, and that we know a few drugs well, rather than to have a little knowledge of many. I think a knowledge of the materia medica of the crude drug is essential, also the action and uses of the active principles contained in it, its chemistry, physiologic and therapeutic effect, and, finally, the most essential thing is that we have sufficient common sense with it all, to rationally apply the little knowledge we do possess.

DISCUSSION.

Dr. Hurst said that in the administration of these three drugs he would study age, and the condition of the heart and lungs. He thinks that as good results were received formerly with their use, as is gotten now from later drugs of coal-tar composition. He believes in the careful use of these and discontinues the dose when results are obtained. He used veratrum in a case of cerebrospinal meningitis, in a family where he was called to see a case of malarial fever and was present when the cerebral case was taken sick. In half an hour, delirium with convulsions ensued. With an ice cap on the head and two drops of tincture of veratrum every forty minutes for forty-eight hours, he cured this case. If you get an over-dose of veratrum in any case, whisky overcomes the depression. He can do more with veratrum than with digitalis. In a patient with a pulse of 120 to 140, and irregular heart action, veratrum will reduce it in a little while to 80, 70, or 60, if necessary. When patient perspires, you may look for results. He heard Norwood, when at college, lecture on veratrum and the following year Prof. Ingals recommended its use, which he declined to do before, in puerperal convul-

sions. He believes that there is no preparation as good as Norwood's and has thrown out other makes.

Patient No. 1. Puerperal convulsions. Bled, emptied uterus without improvement. Gave veratrum and symptoms stopped but patient succumbed.

Patient No. 2. Five days after delivery, seized with convulsions, breaking two molar teeth. Gave heavy doses of elaterium hypodermically, hot water in cans around the body until blistered and gave veratrum. Patient survived and since has given birth to a healthy child without any trouble. Norwood claims no deaths ever followed use of veratrum.

Aconite: He uses aconite where he has congestion in any part of the body, but not in inflammation. He has no use for the alkaloid. One can tell by tasting it if the tincture or fluidextract is strong, with tip of tongue. Aconite and bromids are good to use together.

Digitalis: In exophthalmic goiter, the infusion of digitalis outclasses everything. He has no use for thyroid extract and other agents of a later day. He has used one-half ounce of the infusion three times a day, for six months in one individual with a cure. He does not believe there is any danger of accumulation. The only danger is from an overdose. He considers one ounce an overdose. He has used the infusion for eighteen months with no bad symptoms, then three or four overdoses choked the circulation and the finger nails became blue. He believes that digitalis will act regardless of fever. He does not use coal-tar products for they are dangerous. He thinks many people have been killed by them.

Dr. A. L. Brittin:—This is a very valuable paper. Veratrum is a neglected drug. There is no better drug for epistaxis or secondary hemorrhage from any cause. Dr. A. E. Prince used it first in my experience and told me that his father, Dr. David Prince, always considered it the most valuable drug to use in hemorrhage. Large doses are given, repeated often until the pulse reaches 40 or even 30, when hemorrhage ceases. In pneumonia, there is no better drug than veratrum, using heavy doses at the start. When a boy, I knew of a case in my neighborhood that had convulsions for two days and nights and was told afterward that veratrum cured her. I have had three cases, one of which terminated fatally.

Digitalis: To some people digitalis acts as a narcotic, producing cerebral narcosis. Aconite is a drug worth studying. I think less of the coal-tar products should be used. Some one calls acetanilid the cruel drug. Hole thinks that digitalis has an accumulative action. He reports symptoms of autointoxication he has seen after prolonged use, namely, anasarca, rapid pulse, and seeing objects.

Dr. Rothert reports a case for diagnosis. Married woman, five children, 45 years old, fleshy, sick now four or five weeks. Had pain in region of heart: was first taken sick with chill, temperature 100 to 101 degrees F., pulse 120. He gave her, for pain, one-half grain morphia, and strychnia for circulation. Two days later, a swelling appeared over the collar bone, above site of pain. He made a diagnosis of rheumatism and used very heavy doses of salectin with no relief. Pain and swelling spread to other collar bone, and over entire breast, but breast itself was not swollen or he would have thought of abscess of the breast. There was some swelling of the armpit but not of the glands. Dr. Rothert said she had received an injury several weeks before the chill, but could not see any association of the two. The Society thought the injury had something to do with the trouble or else it was a malignant disease.

Dr. Brittin reported a case of a male, 49 years, spare build. There was an enlargement at the sterno-clavicular articulation. He had pain in the shoulder and neck which had increased. Four or five months ago the tumor was as large as one's fist and the patient asked Dr. Brittin to incise it, but he declined and asked him to come to Menard County Medical Society for diagnosis. He failed to come, but six weeks later came into his office with pus under skin, which was incised. There is still induration and pain, but no pus at present. At first he thought of a sub-clavian aneurism, but now is of the opinion that it is of specific origin.

IRVING NEWCOMER, *Secretary*.

MONROE COUNTY.

The annual meeting of the Monroe County Medical Society was held in Waterloo, June 25. Dr. Sennott, president, and Drs. Heidelberg, Fults, Pantler, Kuehn and Adelsberger were present. The following officers were elected for the ensuing year; President, Dr. O. Kuehn, Burksville; vice-president, Dr. H. Heidelberg, Hecker; secretary, Dr. L. Adelsberger, Waterloo; treasurer, Dr. N. B. Pantler, Waterloo; censor, Dr. S. Kolenbach, Columbia; delegate, Dr. J. S. Sennott, Waterloo. Dr. Sennott reported two cases of pleuro-pneumonia with effusion, in which the ribs were resected and recovery was complete; also a case of appendicitis in a young man, when appendix, seven inches in length, was removed. An essay by Dr. Kuehn on Pernicious Anemia led to an interesting discussion by the members present. Adjourned to meet in Columbia, in special session, July 17.

L. ADELSBERGER, *Secretary.*

A special meeting of the Monroe County Medical Society was held in Columbia, July 17. Addresses were made on the following subjects: Eczema, Dr. S. Kohenbach; Neuritis of Arm, Dr. J. C. Fults; Pyrosis, Dr. Schnellschmidt; Uterine Hemorrhage, Drs. Fults and Pantler; Cancer of Uterus, Dr. M. G. Mixon; Vesico-Vaginal Fistula, Dr. J. S. Sennott. General discussion followed the delivery of each address, the meeting being the most gratifying one held by the Society since its reorganization.

L. ADELSBERGER, *Secretary.*

MORGAN COUNTY.

The regular monthly meeting of the Morgan County Medical Society was held July 12, 1906, with President Dr. Josephine C. Milligan in the chair. Sixteen members were present. The subject of the evening was Puerperal Eclampsia. Dr. H. C. Campbell read a paper on the subject with reports of two cases. Dr. T. A. Hardesty read a detailed report of three cases. The following are extracts from Dr. Campbell's paper, and from the reports of cases:

Of the causes of puerperal eclampsia little can be stated, definitely, though there are a number of remote causes which tend to bring about this condition. Among these may be mentioned primiparity, plural pregnancy, heredity (though this has not been well established), mental condition, position of the child in utero, constipation, and, in consequence of this, probably the most important of all causes, deficient elimination of toxic materials. The exciting causes are believed to be more the culmination of the predisposing conditions and at times very little is needed to precipitate a paroxysm. A sudden, partial or complete suppression of urine; prolonged or painful uterine contractions, with a rigid unyielding os; a sudden fright or pain caused by a hand on the abdomen or the examining finger at the cervix; profound emotion, etc., may be the exciting cause.

The pathology is even more obscure than the cause. The postmortem changes usually found are anemia, generally of all organs; a congestion of the cerebral cortex; occasionally, slight hepatic apoplexies; a fluid condition of the blood and edema of the lungs. The symptoms are usually pronounced and, once seen, are not likely to be forgotten, nor is the physician, with a single experience, likely to be taken by surprise when the convulsions come. The patient usually gives a history of edema of the limbs, scanty or a diminished amount of urine. There is, usually, headaches, dizziness, ringing in the ears, nervous disturbances, epigastric pain, amaurosis, a feeling of general debility, a stupor, or, perhaps, insomnia, mental excitement or despondency; while the urine usually contains albumin as well as casts, epithelium and blood cells, there are numerous instances where no albumin can be found. All these symptoms, or as many of them as may be found in a given case, may subside after purgation and diuresis and the patient may fall into a quiet sleep, and awake feeling refreshed, and go on to the end of her pregnancy. This happy issue, however, rarely occurs. Usually, the premonitory symptoms, after going on for a few hours or even days, suddenly terminate in convulsions, as described above, which last from ten to twenty seconds, and then give way to coma. Rarely does the patient have but a single attack, usually there is a recurrence and the attacks continue at varying intervals over a period

of time not usually exceeding forty-eight hours, the number of attacks depending on the severity of the individual case.

The prognosis in any case of eclampsia must be regarded as grave. Statistics show a large mortality, both maternal and fetal.

What shall we say of the treatment of a disease whose pathology is so obscure? In all cases, there are four indications; namely, to control the convulsions, to support the heart, and to establish elimination through the bowels, skin and kidneys as soon as possible, and, where the seizure occurs during labor, to empty the uterus as rapidly as can be done without injury.

I wish to report two cases which have come under my observation, giving the lines of treatment employed and the results attained.

Case 1.—A farmer's wife, primipara, age 24, had enjoyed a fair degree of health during the pregnancy, except that, as her physicians remarked, "She seemed to need a tonic to keep her up." Several examinations of the urine were made, with negative results, except that there was a low specific gravity, about 1010 or 1012, no albumin nor casts. She had attended to her household duties during the entire summer. I first saw the patient at 6:30 a. m. She had been in labor about three and one-half hours, pains were coming frequently and the dilation of the os was about complete. About this time, expulsive pains were lacking, yet there was abdominal pain, headache and drowsiness, the patient seemed to fall asleep with half-closed eyes, rousing up occasionally to complain of headaches. A little before 8 a. m., she was taken with a violent convulsion, followed by deep coma. Immediately, she was placed crosswise of the bed, forceps applied and labor terminated as speedily as possible, without doing injury to the parts. Immediately after delivery, there was another convulsion, the coma continuing. Thirty grains of chloral were given per rectum and 1/100 grain of nitroglycerin hypodermically, hot water bottles were placed around her, she was snugly wrapped in blankets, and given 1/10 grain pilocarpin, hypodermically. Pulse was weak and ranged from 120 to 130. Patient was catheterized and, on examination, the specimen was found to contain albumin 10 per cent., casts, epithelium and leucocytes. Nitroglycerin and digitalin were given alternately every three hours. There was profuse perspiration but no diuresis and efforts directed toward elimination through the bowels were unsuccessful. Thirty hours from the time of the first convulsion, there was another seizure and, three hours later, the patient died. The labor began at full term and the child, a boy weighing ten pounds, exhibited no ill effects of the disease which caused his mother's death.

Case 2.—A farmer's wife, aged 20, in her second pregnancy. Her first pregnancy and confinement were uneventful, except that final delivery was made with forceps, for no known reason, except that the attending physician got tired. The period of gestation was about 8½ months. Labor pains began at 3 a. m., and continued with increasing frequency and severity until 9 a. m., when they seemed to stop. The patient complained of severe headache, there was marked edema of the limbs and puffiness under the eyes. No examination of the urine had been made as the family had not thought it necessary to consult a physician till labor had begun. Patient was restless, had epigastric pains and felt dizzy. At 9:30 the expected happened, the patient was taken with a convulsion. A hypodermic of 1/100 grain of nitroglycerin was given, with one hand in the vagina. The cervix, which was partially dilated, was dilated as rapidly as possible, forceps were applied and a living child delivered. A convulsion preceded the delivery, which occurred at 9:30 a. m. A third convulsion following in 15 minutes, 15 grains of chloral, and 26 grains of the combined bromids of potash, ammonia and soda were given per rectum. Five more convulsions occurred at intervals of about one-half hour, the chloral and bromids were repeated three times in three hours. Hot applications were put about the patient and extra covering on the bed. The pulse at this time was 140 and weak. Coma was not profound at this time (11:30 a. m.). She was given one-half grain of calomel and one-sixth grain sparteine, dry on the tongue and, by a little persistent effort, a half glass of water was given, the calomel repeated in one-half grain doses every twenty minutes until three grains were given, each tablet being given with a half

glass of water. One and a half hours after the last calomel tablet was given she took Epsom salts, a teaspoonful in a half glass of water, also sparteine, one-sixth grain. By this time (2:30 p. m.), the patient was perspiring freely. The pulse had dropped to 124, she was arousing from her stupor, the headache was gone and she was feeling better, though still, to some extent, under the influence of hypnotic. Directions were given to repeat the saline every hour until the bowels moved freely. I visited the patient again at 9:30 p. m. The bowels had moved freely and a quantity of urine was passed, the amount not estimated. There had been no recurrence of the convulsions, the patient was awake but drowsy, pulse 120. She was given a warm sponge bath, and the clothing of herself and the bed changed. I visited her again the next day at 6:30 p. m. The bowels had moved freely and about four pints of urine passed during the twenty-four hours. Edema was greatly diminished and the patient was feeling very comfortable. The pulse was 84, slightly irregular; temperature 99.4° F. She was given a tablet containing nitroglycerin, digitalis and belladonna, for a few days. There was an uneventful and rapid convalescence. The baby weighed 6½ pounds, was rather blue but thrived. A specimen of urine boiled the next day after delivery was almost solid with albumin.

Dr. T. A. Hardesty reported in detail three cases of puerperal eclampsia.

Case 1.—Primipara, labor at term, no premonitory symptoms elicited, except great edema affecting the legs. A convulsion occurred before the patient was known to be in labor, and the child's head was born long before the arrival of physician or suspicion of labor by family. The child was dead. The woman recovered, but was said to have died of eclampsia two years after.

Case 2.—Primipara, sister had died in eclamptic seizure. Seven months pregnant, feet and legs swollen, was suddenly taken with convulsions. These recurred at intervals of three or four hours, with coma after each seizure, lasting a half hour. I gave morphin and atropin hypodermically and chloral by rectum. After forty-eight hours, labor began naturally, and was completed in three hours, with two convulsions during labor. Rapid recovery of mother.

Case 3.—Primipara. Edema of feet and legs. Labor at or near term, os slightly dilated, contractions good, convulsions one to two hours apart. Os was dilated manually, podalic version performed, and child delivered. Morphin, calomel, chloral and chloroform were used. No fetal heart sound elicited before operation, child dead, mother made rapid recovery.

DISCUSSION.

Dr. Pitner advocated prompt delivery with elimination.

Dr. Woltman reported a case in the Cook County Hospital in which venesection seemed to hasten recovery.

Dr. Hairgrove questioned the necessity of delivery in many cases before term, and recommended elimination and sedative treatment instead of the emergency and prophylactic, principally eliminative, treatment until full term.

Dr. Norbury advocated hypodermoclysis, using large quantities of fluid.

Dr. Bowe advocated prophylaxis, especially in the matter of examining the urine during pregnancy. A constantly decreasing amount of urea in the urine was a danger signal and when the descending scale reached a certain point, if it could not be turned, labor should be induced artificially.

Dr. Campbell, in closing, said that these cases are most likely to occur in the country or in families that have not thought it necessary to consult a doctor in advance, and, five miles from one's office, with only one or two frightened old women as assistants, there is little opportunity for the application of scientific measures.

MORGAN COUNTY.

The Morgan County Medical Society met in regular session, with Dr. A. L. Adams in the chair. Dr. E. F. Baker read a paper on the Septic Tank System of Disposal of Sewage. For ages, it has been customary for cities to divert their

sewage into running streams and rivers as far as possible. This is all right, where such streams exist, fill somebody farther down the stream objects. Cities along streams have equal rights, and object to having water constantly polluted with the sewage of cities above them on the same stream. In Jacksonville, the city sewage is discharged into the Mauvaisterre Creek, a stream that is almost dry part of the year, and as the amount of the city's sewage increases, the condition becomes more and more unsanitary, to say nothing of complaints that may arise any day from those owning land farther down the stream.

In the case of Chicago versus St. Louis, the courts have decided in favor of the former city. Her proximity to Lake Michigan enables her to discharge a sufficient amount of water into the river to overcome the damage done by the sewage, and the St. Louis water supply was proved to be benefited rather than injured by the opening of the Chicago Drainage Canal. Inland cities are rapidly growing throughout the country, and are less favored. Although sewage will purify itself in running water, where there are no streams some new system has to be devised. The Septic Tank System calls into existence no new laws. The effect is not chemical, but is a process of fermentation. The Septic Tank consists of a walled and covered reservoir into which the sewage is discharged. It must be large enough to hold at least twenty-four hours sewage deposited therein, and in this water-tight reservoir, protected from light and currents of air, there develops myriads of anaërobic bacteria, such as already exists everywhere. These bacteria, produced below the surface of the water, destroy all pathogenic bacteria, and hasten the decomposition of all organic matter contained in the sewage. The sludge or ash, remaining after all organic matter is destroyed, rises to the top and forms a heavy crust over the contents of the tank, which further shuts out the air and increases the action of the bacteria below the surface. This sludge forms but a mere fragment of the sewage and has little fertilizing power. Very little noxious gas is given off during this process of decomposition, and the water after passing through the tank and being subjected to the action of the bacteria for at least twenty-four hours, is clear and innocuous.

At Lake Forest, where they use this system, the outlet from the Septic Tank opens into the lake not far from the city water intake. Champaign has the oldest system in the state, being about seven years old. Urbana, Belleville, Edwardsville, and a number of other important cities in the state use this system. The system is both practical and economical. When once installed, it needs little repair and no attention. There is no labor connected with it except that the sludge is cleaned out every two or three years. Any size works well. A single house, a hospital, a village or city may have one or more septic tanks for the disposal of its sewage.

This is the general plan of the Septic Tank. There are some variations and contrivances, such as the automatic storm valve, which side tracks the storm water without going through the tank; the baffle board, which retards the flow and keeps the crust of sludge from floating off; the dividing wall, etc. The tank at Champaign is about forty, by sixteen, by eight feet.

Dr. T. J. Pitner opened the discussion. A number of systems of disposing of sewage have been tried and most of them have proved failures, largely on account of the cost. The chemical disposal of sewage and filter beds are very costly systems. In Berlin, they have a vast irrigation system for the utilization of the sewage, costing about \$13,000,000. In some of the cities of India, the same process has been used much more successfully. The sewage is directed in pipes to the farms that it is to irrigate, and it is noticeable that farmers, working on the lands so irrigated, are not affected by diseases arising from the sewage, as the disease germs are destroyed by the putrefactive germs. In some places, sewage has been filtered through beds of coarse broken rock, etc., each bed becoming finer. Even in the Septic Tank System, it is well to have strainers to strain off paper and the coarser sewage before entering the tank.

An improvement on the plan spoken of by Dr. Baker is to use the water after passing from the tank through pipes near the surface for irrigating lawns and gardens. The Septic Tank System is simple, effective, inexpensive and applicable

to this city. One could be placed at the mouth of each sewer, making two or three, as might be considered best. Adjourned.

A. L. ADAMS, *Vice-President*.
D. W. REID, *Secretary*.

STEPHENSON COUNTY.

The Stephenson County Medical Society held a meeting in Freeport, July 11, 1906, at the Court House. Dr. W. F. Karcher was appointed to act on the committee for State Medical Defense. A resolution was adopted, in which the members of the County Society were urged to aid in the regulation of the charges for fraternal and old line insurance examinations. Dr. A. E. Smith reported what had been done by the committee which had charge of the proposed Post Graduate school. The committee was retained and ordered to report at the next meeting. Dr. J. F. Percy was present and added much to the interest of the meeting by taking part in the general discussions. In the evening he addressed the members of the County Society. Following is a list of the officers for the next year, elected at this meeting: President, Dr. M. M. Baumgartner; vice-president, Dr. Linda K. Hutchins; secretary, Dr. Mary L. Rosensteil; treasurer, Dr. C. L. Mease; delegate to the State Society for two years, Dr. R. J. Burns; censor for three years, Dr. E. Brockhausen; delegates-alternate, Dr. N. J. Rideout.

MARY L. ROSENSTEIL, *Secretary*.

WAYNE COUNTY.

The regular meeting of the Wayne County Medical Society was held at the office of Dr. C. O. Truscott, in Cisne, Wednesday, July 18, 1906. The meeting was called to order by the president, Dr. W. M. Johnson, at 10:30 a. m. Members present were: Drs. G. A. McDonald, W. C. Sibley, David Hilliard, W. M. Johnson, C. O. Truscott and J. P. Walters. The minutes of previous meeting were read and approved. The applications of Dr. J. L. Young, of Rinard, Dr. P. M. Gray, of Cisne, Dr. C. E. Johnson, of Johnsonville, and Dr. F. F. Davis, of Jeffersonville, were read and, by motion of Dr. Truscott, the rules were suspended and the applicants were elected to membership by unanimous vote.

A communication from a specialist, in which he proposed to come to Fairfield on some Sunday and operate on any and all cases of eye trouble in the county free of charge, for persons who are not able to pay for such, was presented to the society and freely discussed by all present. By some it was claimed that Wayne county was well able to take care of its own indigent eye cases; that any specialist who would come to Fairfield, from a distance of 100 miles or more, to hold a free clinic, was seeking either practice or notoriety, or both; and that the county could pay for the pauper work, to some beginner, who needs the work as well as the fee. Others looked upon the proposition more favorably, since it gave the physicians of the county an opportunity to witness some difficult and delicate operations, thereby better preparing them to care for their own patients in the future; then the specialist idea should be encouraged more by general practitioners, many of whom are more or less specialists themselves, having a particular liking for certain departments in the great field of general practice; that he who studies specializes more, he likes his work better, seeks literature and searches for cases and is better prepared to successfully treat his particular class of cases and, ere long, is sought for counsel. The subject was warmly and freely discussed. It was the prevailing sentiment of the Society that no eye specialist be called to hold a free clinic in this county.

Dr. B. A. McDonald's paper, *The Relation of the Country Practitioner to the Specialist*, was first on the program, but, as the subject matter had been thoroughly discussed, while the previous question was up for discussion, the author refused to read the paper, claiming that the grounds had all been covered in the matter just discussed.

The noon hour having arrived, the Society adjourned for dinner. Dr. Truscott informed us that he was prepared to entertain all of us. We went to his residence, where a rich and bounteous dinner was served. To make the noon hour more pleasant, Dr. Truscott had arranged for the Cisne Clover Leaf String Band to entertain us with music. This band is composed of ladies, who did their part well.

After dinner, Dr. C. O. Truscott read a paper on The Benefits of a Medical Society. The ethical, educational, professional, social and financial benefits were all very carefully considered. The paper plainly shows that the Society gives an opportunity to each individual member to increase his knowledge, to compare his experiences and to adjust his mistakes. At the Society he gets new ideas, reports his success and failures. The benefit to all is mutual. A vote of thanks was tendered Dr. C. O. Truscott for the royal entertainment the Society received at his home. His efforts to make it pleasant for each individual member of the Association were successful, and were duly appreciated by all. A similar vote of thanks was tendered Dr. B. E. Garrison for the royal manner in which he entertained the Society at his home in Wayne City, on the 10th of last April, which, by some mistake, failed to be published with the minutes of the meeting.

The Society adjourned to meet at Fairfield on the second Wednesday of October, 1906.

W. M. JOHNSON, *President*.

J. P. WALTERS, *Secretary*.

CORRECTION.

DR. BOUTON OBJECTS.

Dr. W. C. Bouton, of Waukegan, has called our attention to several errors in the July JOURNAL, page 64, in which the name Bowden was substituted several times for his own, and, as if that were not enough, two more errors occur on page 115 of the August JOURNAL in which the name of Dr. J. S. Beaudry, of Chicago, is substituted for Dr. Bouton again. We take this opportunity of correcting these errors and regret its occurrence, which, of course, was unintentional on the part of the stenographer making the report.

NEWS OF THE STATE.

Dr. Burr Caldwell has located at Bethany.

Dr. Young, of Breckenridge, has located at Hamilton.

Dr. Graves, formerly of Dement, has located at Bethany.

Dr. Charles Truc, of Kankakee, is ill with angina pectoris.

Dr. Samuel R. Slaymaker, of Chicago, has sailed for Europe.

Dr. C. C. Rhodes, of Monticello, has located in Terre Haute, Ind.

Dr. S. H. Rutledge, of Pilot Mound, Iowa, has located at Milford.

Dr. C. Fred Grimmer, of Topeka, expects to leave soon for Vienna.

Dr. Franklin E. Wallace, of Monmouth, sailed for Europe August 15.

Five cases of diphtheria are reported in one family near Blue Mound.

Dr. C. C. Walker, formerly of Chicago, has located in Lamberton, Minn.

Dr. and Mrs. G. W. Fiegen, of Nauvoo, are victims of an automobile accident.

Dr. J. Bernard Carey, of Donaldson, was operated on at St. Louis August 3.

Dr. Stephen W. Cox sailed from Montreal to Liverpool the first week in August.

Dr. R. F. Lischer has succeeded to the practice of Dr. J. O. DeCourcy at Mascoutah.

Diphtheria has developed at Edwards Station, six cases being reported to date.

Dr. C. W. Lillie has been elected chief of staff of the Henrietta Hospital, East St. Louis.

Dr. and Mrs. Arthur R. Elliott have sailed for Europe to remain until the 1st of October.

Dr. H. G. Harris, of Chicago, has become a partner of Dr. A. W. Wilson, of Wilmott, S. D.

On August 11 a daughter was born to Dr. and Mrs. Edson B. Fowler, 3359 Indiana avenue, Chicago.

Dr. Ira Frank is slowly improving from injuries received in an automobile accident some weeks ago.

Dr. Don Deal, a recent graduate of the Northwestern University Medical School, has located in Springfield.

Dr. Scott, of Elliott, has succeeded Dr. Yantis at Foosland, and has occupied the office and residence of Dr. Yantis.

Dr. Yantis, formerly of Foosland, has moved to Urbana, and has taken an office in the new Flatiron Building there.

Dr. F. A. Olms, who has been located for several years in South Elgin, has been succeeded by Dr. C. E. Struve, of Chicago.

Dr. and Mrs. Edson B. Fowler, of 3359 Indiana avenue, Chicago, have returned home after a year spent in study and travel in Europe.

Dr. Leslie Casburn has located at Bentley, having bought out Dr. G. E. French. Dr. French has gone to San Francisco, Cal.

Dr. Albert H. Dollear, of Jacksonville, has been appointed assistant physician at the Illinois Western Hospital for the Insane.

The Swedish-American Hospital Association, Green and Sixtieth streets, Chicago, has borrowed \$35,000.00 for ten years at 5 per cent.

Mrs. Minnie Girk and Mrs. Pauline Schulke, of Decatur, have been fined \$100.00 and costs for practicing midwifery without a license.

Dr. H. Edward Sauer, of Chicago, has recovered from an operation for appendicitis recently performed, and is able to resume work.

The Isolation Hospital at Chicago has been vacant since July 18. This is the first time that the hospital has been without patients since January 1.

The State Board of Health reports diphtheria as prevalent in several different parts of the state, deaths being reported from Roseville and Swan Creek.

Suit has been filed against the National Medical University by Mrs. Minnie S. Mason for the possession of the property on which this institution is located.

The Illinois State Board of Health has been making a careful examination of farm wells throughout the state, and has found about 40 per cent. of them to be polluted.

Dr. Nicholas Senn, of Chicago, has returned from the trip through northern and eastern Africa, where he went following the International Medical Congress at Lisbon.

The first case of smallpox which has appeared in Cook County for over a month was reported from Evanston on August 12. The patient had come from Michigan a few days before.

Dr. Svenning Dahl is in Europe for the purpose of study. Dr. Carl Doepfner will have charge of the surgical department of the Norwegian Lutheran Deaconess Hospital during Dr. Dahl's absence.

A case of smallpox was discovered in a Chicago hospital on August 14. The patient, who had recently returned from Milwaukee and Joliet, had been taken from a boarding house on West Madison street.

Carl C. Quale has asked the courts to compel the faculty of Dearborn Medical College to issue him a diploma. He declares that he was proficient in all his studies, but that the faculty have refused to graduate him.

Dr. F. B. Moore, formerly of Plano, has removed to Sterling and has rented the Richard Staples house on Sixth avenue. Dr. Moore has taken a suite of offices in the Bank Building and intends to practice medicine in Sterling.

Dr. Gin Wai Chan, a Chinese medical student, has been licensed by the State Board of Health to practice medicine in Illinois. This is said to be the first instance on record of a Chinaman receiving a license from the Illinois State Board.

Dr. Harry Kahn has returned from a year's study in Vienna and announces the removal of his office to the Columbus Memorial Building, 193 State street, Chicago, where his practice will be limited to diseases of the ear, nose and throat.

The Brokaw Hospital of Bloomington will complete an addition this summer which will be devoted to baths, lavatories and rooms for electrical treatment and massage. The new building will be of brick and will form the east wing of the hospital.

Dr. W. O. Ensign of Rutland, Dr. T. Ewing Cherry of Cowden, Dr. George C. Meacham of Taylorville, Dr. O. B. Babcock of Springfield and Dr. J. B. Maxwell of Mt. Carmel were delegates to the Republican State Convention recently held at Springfield.

Wesley Hospital, Chicago, has issued its seventeenth annual report, showing that since 1901 the hospital has increased in capacity from 28 to 150 beds. During the last year over 3,000 patients were admitted to the hospital. The total number of operations performed was 2,082.

Dr. R. C. J. Meyer, health officer of Moline, has obtained the authority to establish free public baths. A building which will contain accommodations for men and women is to be constructed at a cost of \$1,000.00. It will also be used as headquarters for the Moline Division of the Illinois Naval Reserve.

Lawrence E. McGann, Comptroller of the city of Chicago, has received an offer from a woman philanthropist, whose name has not been disclosed, to erect a school for the deaf at Twenty-second street and Hawthorne avenue, where the city has property. It is said that a donation of \$50,000.00 has been offered.

The health officer of Peoria reports smallpox in mild form in a family consisting of father, mother and six children, all of whom, having contracted the disease, were sent to the detention hospital. It is believed that the contagion was brought by a member of the family who recently returned home from California.

During the month of July coroner's juries in Chicago investigated 336 deaths, of which 150 were due to violence, 40 to street car and railway accidents and 33 to suicide. Twenty-four persons were drowned and 11 deaths were due to Fourth of July injuries. There were 14 homicides and one death following an automobile accident.

Under orders from Chief Medical Inspector Spalding of the Chicago Board of Health and Chief Sanitary Inspector Hedrick, the city has undertaken to drain the pools and fill in the hollows in "Streeterville." Residents along the Lake Shore drive have discovered that millions of mosquitoes are bred in the stagnant pools along the lake shore.

The Chicago Medical College, which for the last twenty years has formed the medical department of Northwestern University, has completed a merger with the university by giving a quit-claim deed for all of its property to the university trustees. This act marks the complete absorption of the former institution, one of the oldest medical colleges in the West.

Dr. D. M. Otis and Charles J. Graver, of Springfield, have been sued for \$5,000.00 damages because it is alleged that they performed an autopsy on the body of John Gonsalves at the Springfield Hospital without the consent of his relatives. The physicians in this case claim that Gonsalves was a pauper and that they fulfilled the sections of the law permitting them to perform an autopsy.

The Illinois Medical College, the Chicago Summer School of Medicine, has given a trust deed to the Union Trust Company to secure a loan of \$25,000.00 for five years at 5 per cent. The loan is secured by property owned by the college at the southwest corner of Washington and Halstead streets, and is being used for paying the remainder of the original price of the property and for improving the institution.

Newspaper reports state that Dr. Zook, of Princeville, has been arrested on a charge of sending libelous postal cards through the mail concerning his successor, Dr. O. E. Baker. Dr. Zook left Dunlap last fall, and Dr. Baker succeeded to his practice. Later on, it is claimed, Dr. Zook returned to Dunlap and resumed practice. This action on his part is said to have given rise to personal difficulties between the two physicians.

At a meeting of the trustees of the Illinois Eastern Hospital for the Insane and the State Board of Charities it was decided to make radical improvements in the system of nursing and the attention given to patients in the insane asylum. A pathological laboratory will be established and a pathologist employed who will keep careful records of all cases. The trustees also planned to open a training school for nurses in September.

The Cook County Board unanimously adopted a resolution on August 13 giving the Chicago Tuberculosis Institute the privilege of establishing a camp for consumptives on the grounds belonging to Cook County at Dunning. The camp will be established at once and will be kept open until November 1 at least. There are 20 female patients ready for admission to the camp. The attending staff is composed of Drs. Henry B. Favill, Ethan A. Gray and Theodore Sachs.

Dr. Francis Stewart, recently convicted on the charge of robbery, was sentenced to an indefinite term in the penitentiary by Judge Kersten on August 17. This is the second conviction secured against Stewart. Two years ago he was found guilty and sentenced to the penitentiary, but the Supreme Court reversed the decision. The charge in the second case was brought by Felix Berard, of Montreal, who, it is said, called on Dr. Stewart on Oct. 1, 1905. Stewart, after examining him for a few minutes, is said to have demanded \$110.00 and to have used threats which induced Berard to pay him the money.

The Monmouth City Council has passed an ordinance forbidding the distribution of medicines from house to house. The measure makes it unlawful for any person, corporation, agent or employé to distribute gratuitous samples of medicines, drugs, ointments, pills, powders or pellets from house to house, without first securing a license. It further provides that no license shall be issued unless the health officer of the city

shall approve of the samples to be distributed, also that the formula for all medicines proposed for distribution shall be submitted with the samples. A third clause provides that before any such license shall be granted the applicant must file with the city clerk a bond in the sum of \$2,500.00, with satisfactory securities, which bond shall guarantee that the person, firm or corporation distributing such samples shall pay any or all damages resulting to any persons who may take or use such samples. The fourth clause of the ordinance provides for a fine of \$50.00 and costs, or imprisonment for one to thirty days, for any violation of the ordinance. The mayor having failed to sign the ordinance after its adoption by the City Council, it became a law without his approval.

MARRIAGES.

FRANK DONALD BURNS, M.D., Chicago, at Shellsburg, Iowa, July 18.

STANLEY CASTLE, M.D., Springfield, to Miss Elsie M. McDowell, of Chicago.

WILLIAM G. ROSS, M.D., Kempton, to Miss Carrie Hays, of Joliet. June 16.

ALOYSIUS J. LENNON, M.D., Joliet, to Miss Rose Finlen, of Streator, June 20.

VICTOR PACYNA, M.D., to Miss Ethel Friend, both of Chicago, August 7.

BURTON HAZELTINE, M.D., of Chicago, to Miss Leitch, of Evanston. August 25.

DWIGHT E. MORTON, M.D., to Miss Bertha C. Bugg, both of Taylorville, July 5.

ROBERT H. HERBST, M.D., to Miss Grace Adele Bellows, both of Chicago, July 25.

W. O. MCBRIDE, M.D., Joliet, to Miss Nannie Francis, of Lima, Ohio, June 20.

F. A. RENNER, M.D., St. Jacob, to Miss Della May Midgley, of Lebanon, August 4.

HALFORD J. MORLAN, M.D., to Miss Percy Eugene Bohrer, both of Ludlow, June 30.

EDWARD C. ROSENOW, M.D., Chicago, to Miss Lydia Senty, of Arcadia, August 1.

CHARLES O. NELMS, M.D., Taylorville, to Miss Cora T. Allen, of Rock Island, July 26.

ELBERT A. BING, M.D., Browns, to Miss Cora Estes Whitson, of Johnsonville, June 27.

A. HARTMAN, M.D., of Chicago, to Miss Nora May Ball, of Grand Haven, Mich., July 18.

ISAAC CLARK GARY, M.D., Chicago, to Miss Emma C. Bollinger, of Kahoka, Mo., August 1.

D. F. MORTON, M.D., Taylorville, to Miss Plowman, of Missouri, formerly of Taylorville.

C. A. W. ZIMMERMAN, M.D., to Miss Cecil Ray Mehan, both of East St. Louis, June 4, 1906.

JAMES LEWIS FLEMING, M.D., Chicago, to Miss May Ormsby. Dougherty, Iowa, June 20.

ALFRED HUGH FOWLER, M.D., Chicago, to Miss Josephine Smith Bates, of Fairbury, June 30.

DEATHS.

JOHN H. SCHMIDT, M.D., died at his home in Quincy, July 28, after a long illness, aged 83.

J. S. HAMILTON, M.D., committed suicide at his office in Joy, by cutting his throat, July 27, aged 40.

THOMAS C. THOMAS, M.D., died at his home in Peoria, July 21, after an illness of three years, aged 69.

WILLIAM S. CHANNING, M.D., died in the Presbyterian Hospital, Chicago, June 28, after an illness of nine weeks.

WILLIAM G. HOUTZ, M.D., died at his home in Lincoln, Ill., June 30, from septicemia, after an illness of seven days, aged 75.

JOSEPH DE VERE, M.D., died at his home in Chicago, July 29, from cancer of the stomach, after an illness of one year, aged 55.

JOHN T. GRAY, M.D., died at his home in Chicago, July 10, from cerebral hemorrhage, after an illness of less than an hour, aged 67.

JOHN ELLISON BEST, M.D., died at his home in Arlington Heights, August 1, from myocarditis, after an illness of five weeks, aged 63.

ALBERT C. JOHNSON, M.D., died at his home in Sidell, June 10, from tuberculosis of the spine, after an illness of one year, aged 34.

SAMUEL P. BOARDMAN, Springfield, graduate of the University of Wooster, Cleveland, Ohio, 1895, while temporarily insane, committed suicide.

ITHIEL SILSBY STEVENS, M.D., Cincinnati College of Medicine and Surgery, 1880, of Peoria, died, August 1, from acute spinal disease, after an illness of one day, aged 55.

WILLIAM FEGERS, M.D., Northwestern University Medical School, 1879, of McHenry, died suddenly at his home at Palm Beach, Pistakee Bay, August 7, from heart disease, aged 72.

DR. WILLIS C. GLIDDEN, M.D., Chicago Homeopathic Medical College, 1879, died at his home in De Kalb, July 15, from diabetes, from which he had suffered for several years, aged 56.

EDMOND CHURCH INGALLS, M.D., Rush Medical College, 1894, but never a practitioner of medicine, formerly a resident of Oak Park, Ill., for many years a sufferer from sciatica, on account of which he had acquired the habit of drug use, which he had repeatedly tried to overcome. died in the Shirley Hotel, Denver, Colo., August 1, from an overdose of cocain, aged 38.

ALEXANDER MEMELSDORF, M.D., University of Würzburg, Germany, 1881; some time staff surgeon in the German Army, professor of dermatology and venereal diseases in the Illinois Medical College, a member

of the American Medical Association; a respected practitioner and a successful teacher, died at his home in Chicago, May 18, from heart disease, after an illness of one year, aged 47.

DR. JAMES C. HARMON died August 1, 1906, of progressive paralysis, at the Julia F. Burnham Hospital, Champaign. Dr. Harmon was born in Vermont and grew to manhood among the rugged hills of that state. Upon the breaking out of the civil war, he enlisted as a volunteer in the Thirteenth Vermont Infantry and, with his regiment, became part of General Stannard's celebrated Vermont Brigade, which did such effective service at the battle of Gettysburg. In this engagement Dr. Harmon received injuries that made it necessary for him to quit the service, and, upon returning to civil life, he entered the medical department of Vermont University, from which in due time he graduated. In the early seventies he removed to Illinois and located at Rantoul, Champaign County, where he soon secured a large practice. For some years Dr. Harmon had been in failing health. Nevertheless he continued in practice up to about two months before his death. He was held in the highest esteem by his fellow practitioners and fellow-citizens. Few men devoted their lives to the sick and suffering as unselfishly as did Dr. Harmon. As long as his health permitted he was a regular attendant upon the meetings of the Illinois State Medical Society. His funeral, which occurred at Rantoul August 3, was largely attended by all classes.

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No. 4

ORIGINAL ARTICLES

SYMPOSIUM ON SEROUS INFLAMMATIONS.

CYTO-DIAGNOSIS OF PLEURITIC AND PERICARDIAL FLUIDS OF ALL SORTS.*

A. A. GOLDSMITH, M.D.

Instructor in Histo-pathology Northwestern University Medical School.

CHICAGO.

The problem of establishing an etiologic diagnosis, in studying the inflammations of the thoracic serous cavities, by determining the cell content of the exudate, is not essentially different from its application to other endothelium-lined cavities. Although this means of diagnosis has received marked attention only since 1900, at which time the result of Widal's work appeared, yet as many as twenty years previously, work along the same line was published by Ehrlich and followed by others, among whom was Quincke. There is at present an extensive literature, a large part of the work having been done by the French and Italians. Having nothing new to offer, my endeavor will be to present, in a few words, the present status of the subject.

First, let us inquire as to how the tissues react to various stimuli. One would naturally expect to find some similarity existing between the exudates produced in various parts of the body by any one variety of bacteria, irrespective of whether this exudate is poured into a serous cavity or remains in the tissue spaces. In reality, we do find some similarity, although we must admit that at times the difference is marked enough to give rise to confusion.

Cytodiagnosis depends upon the recognition of the following elements: 1. The lymphocyte, which corresponds to the same cell in the blood; 2. the polymorphonuclear leucocyte, also corresponding to the same element in the blood; 3. the endothelial cell. The first two are the chief cellular constituents of exudates or inflammatory fluids; and the third is a prominent feature of transudates or fluids the result of mechanical disturbance.

* Read before the Section on Medicine, Illinois State Medical Society, at Springfield, May 15-17, 1906.

It is generally accepted that the polymorphonuclear leucocyte is derived from the blood, and it is practically self-evident that the endothelial cells are derived from the lining of the serous cavity or from the lymph spaces draining into it; it is necessary, therefore, to account for the origin of the lymphocyte only. The question as to whether this cell is derived from the blood or from the connective tissues, has long been controversial. In a recent publication, Orth¹ claims to have seen the lymphocyte leaving the vessel wall by means of ameboid motion; from this we must admit the possibility of these cells reaching the fluids of the pleura and pericardium. Judging from this and from analogy, there is no good reason for trying to refute the probability that the lymphocyte of the fluids under consideration is the lymphocyte of the blood. We know that this is the cell that is attracted especially by tuberculous infections, and only in case of secondary infection do we find the polymorphonuclear leucocyte. On the other hand, the latter is the one that is attracted to the tissues, as the result of the irritation of the toxins of the various pyogenic bacteria.

In case of fluid in the thoracic serous cavities, the diagnostic question is usually, "Is it a tuberculous or a non-tuberculous inflammation, or is it merely the result of mechanical hindrance to circulation?" I will, therefore, mention briefly the cellular characteristics of these conditions.

Tuberculous Exudate.—Although we find some neutrophils (i. e., polymorphonuclear leucocytes) and endothelial cells, the one upon which we depend, if upon anything, for diagnosis, is the lymphocyte. It may be the only cell found. If of the cell aggregate over 50 per cent. are lymphocytes, it points toward tuberculosis and, in case this number is 90 per cent. or more, it throws a very strong probability in favor of it. Early in the course of a tuberculous exudate (first few days), according to many observers, the neutrophils are in excess, to be gradually replaced by the more characteristic element. In case a tuberculous cavity of the lung communicates with the pleural cavity, the fluid, on account of the secondary infection, will exhibit many, or a preponderance of, neutrophils. Lossen² claims that whether we have lymphocytes or polymorphonuclear leucocytes in a fluid depends not upon the cause of the inflammation *per se*, but upon the severity of it. J. L. Miller³ has shown that in long-standing simple pleuritis, or in hydrothorax, there may be a preponderance of lymphocytes.

Non-Tuberculous Exudate.—It is usual to find an excess of neutrophils. Early in the disease there may be large numbers of endothelial cells; later the percentage is reduced, either because of the disproportionate increase of the neutrophile, or because the serous membrane becomes covered with fibrin, preventing further desquamation. It is probable that the two factors are combined. There may be great difficulty in recognizing the neutrophile in long-standing exudates, as will be shown later on.

1. Orth: Deutsche Medizinische Wochenschrift, Jan. 18, 1906.

2. Lossen, J.: Deutsches Archiv. für Klinische Medizin, vol. lxxxvi, Nos. 1-3, December, 1905.

3. Miller, J. L.: American Medicine, Nov. 12, 1904.

Transudates.—The characteristic element is the endothelial cell. These cells may occur singly, or what is more important from our standpoint, in larger or smaller sheets. As these cells are always accompanied by either one or both of the two other varieties of cells mentioned, it is readily seen that it is difficult or impossible to make a diagnosis of a transudate from the cell-content of the fluid alone. Especially is this true, when we consider the fact that, in inflammatory fluids, especially early, we may find a great many endothelial cells. But, if we find these cells very numerous, especially if they occur in sheets, it is at least a hint in the direction of a transudate.

The red blood corpuscle being of no diagnostic importance, has not been considered.

It is not out of place to say a few words with reference to the technique of preparing specimens after the aspiration of the fluid. 1. Centrifuge. In case the fluid contains a very large percentage of albumin the sediment may be mixed with normal salt solution and material again centrifuged. 2. Sediment spread on slide and dried in the air. 3. Fixation. (a) Absolute alcohol and ether (equal parts), or (b) formalin 1 part, absolute alcohol 9 parts. 4. Staining. (a) Hematoxylin and eosin; (b) Wright's stain (this requiring no previous fixation).

Great difficulty may arise in recognizing the various cells, because of degenerative changes that occur during the time the fluid is in the serous cavity. For example, the neutrophils may lose their granules, and, what is even more confusing, the elements of the nucleus may fuse. It will then resemble very closely the lymphocyte, but is apt to betray its identity by retaining an opening in the center of the nuclear mass. Lossen presents some interesting comparisons between the cells of the exudate and the cells found in the tissue at autopsy. There may be only a few neutrophils in the tissue, when there are a great many in the fluid. There may be almost complete absence of extravascular red blood corpuscles in the tissues, whereas, in the fluid the latter usually exceed the leucocytes. In cases exhibiting even a purulent fluid in the pleural cavity, there may be found in the serosa and subserosa, on section, very few neutrophils. In these cases Lossen found that in the tissues the majority of the cells were round, with intensely stained nuclei and small amount of perinuclear protoplasm. He offers two possible explanations for the disparity. The first is that the cells may wander so quickly through the serosa that, on section one sees very few of them, whereas the fluid exhibits the aggregate. If, at the time of exudation, the connective tissue spaces are large, that is, "loosened up," we find a collection of neutrophils or of red corpuscles in the tissue. Based upon this fact, the second explanation he offers is that the cells with single deeply staining nuclei are the neutrophils, which, in firm tissue, are not allowed their usual development, this being possible, however, in case tissue is "loosened up" by edema. The former seems to be the more reasonable.

On account of its uncertainty, I have said nothing with reference to the diagnosis of an exudate due to a neoplasm. Quincke, however, claimed that one is able to diagnose carcinoma cells, in that they are

larger, more numerous and more polymorphous than endothelial cells. The nuclei of the carcinoma cells are much larger in proportion to the cell body than is the case with endothelial cells. We must not forget, however, that the endothelioma is not an uncommon tumor of the pleural cavity.

In regard to the actual practical value of cyto-diagnosis, as is the case with most new discoveries in medicine, in the beginning, too much was expected from this means of diagnosis, and, naturally, it has required time and study to settle this point. We must admit that in practically no case is the diagnosis in regard to etiology to be made from the cell-content of the fluid alone. The character of the cell exudate depends not alone upon the etiology, but also, at least at times, upon the severity of the infection. The presence in fluid of lymphocytes to the exclusion of other cells is one ear-mark of tuberculosis. The presence of polymorphonuclear leucocytes, in a percentage of 75 or more, points very strongly in favor of its being caused by an acute non-tuberculous inflammation. The occurrence of endothelial cells in large number, especially if they are in sheets, is one indication of a transudate, such as may be found in heart or kidney lesions.

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EMPHYEMA.*

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As employed in the subject under consideration, the term empyema refers to the accumulation of pus in the pleural cavity. Professor Holt, in his work on diseases of children, describes the primary process as "an inflammation with the production of serum, fibrin and pus, at first accumulating in small pockets. The adhesions finally break down, the whole cavity becoming filled with pus, or with septa of adhesions remaining, the pus may become sacculated." Fibrinous exudates may cover both parietal and visceral pleura and, by extension, may involve the outer surface of the pericardium. The pleura is thickened and upon removal or absorption of the pus, becomes adherent and remains so after the recovery of the patient. Effusions within the pleural cavity may be primarily purulent or at first serous, becoming purulent later in the course of the disease. In a case of double pneumonia, with a left-sided effusion and pericarditis, which occurred in my hospital service, I drew off a quart of serum, at the end of the second week of the disease, which upon centrifugation, showed a considerable number of leucocytes. A few days later a quart of purulent fluid was removed and, with the insertion of two large-sized drainage tubes, the patient made a good recovery. A considerable quantity of fluid, a flocculent exudate, or a moderate amount of pus, may be disposed of by nature without surgical interference, but this is not the rule as regards the latter condition. Saccula-

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tion, due to partial adhesions, may so modify the physical signs as to cause doubt in regard to diagnosis and embarrassment in locating the pus during operation.

The cause of purulent exudates in the pleural cavity is an infection from micro-organism, such as the streptococcus, following, in the majority of cases, an acute pleurisy; the pneumococcus, accompanying a pneumonia; a double infection associated with a tuberculosis; a metastasis as occurs in puerperal infection, typhoid fever, or, in fact, the introduction, into the pleural cavity, of any pus-forming microbes through traumatism, resulting in injury to the pleural membrane, such as stab wounds, gunshot wounds or fracture of the ribs. The etiology can be made out only by a careful study of the clinical history in each case.

The direct microscopic examination of the exudate for diagnostic purposes, where tuberculosis is suspected, can not be relied upon, as an endless amount of labor might be entailed without detection of the tubercular bacillus. Cultures should be made and examined and guinea-pigs should be inoculated where circumstances will permit, in order to remove doubt as to the presence of tuberculosis. Tubercular cases are rarely pure infections. They are usually mixed with streptococcus, staphylococcus or pneumococcus. A tuberculous exudate in the pleural cavity may follow an acute dry pleurisy, serofibrinous pleurisy, or it may develop without any premonitory symptoms. The insidious manner of its appearance may be illustrated by the following case, seen in consultation: The attending physician suspected fluid in the pleural cavity. The patient, a man of 40, was a teamster and, until a few days previously, had followed his vocation. His heart was displaced to the right by a left-sided exudate. His only complaint was difficulty in breathing and, when told of his condition, was disposed to doubt it, as he had suffered so slightly from the accumulation. About half a gallon of bloody serum was withdrawn, which soon reaccumulated, and, with fever and loss of strength, the patient died a few weeks later, after a second removal of the fluid.

In my service at the Springfield Hospital during the past two years I have treated a number of cases of empyema arising from pneumonia, one from a general infection following a miscarriage, one from a gunshot wound of the lung and in consultation I have also seen one resulting from a stab with a knife and another from a bayonet. The latter presented nothing unusual, but the case following the miscarriage may prove interesting.

This was a case of a woman of 25 years of age, having one son of about 4 years of age. She miscarried at three months and developed fever shortly afterward, followed by general infection resulting in multiple abscesses in different parts of her body, including the lower extremities and the arms. Eight abscesses had been previously opened, when she came under my care at the hospital with a discharging sinus in the sixth intercostal space on the right side, at the site of an incision which had been made by her former attending physician. This was inadequate for emptying the pus, so I resected a rib in order to provide for more

complete drainage. The pus in this case was due to a streptococcus infection. She left the hospital and returned to her home in a neighboring city before the cavity had healed, and I do not know the subsequent history of her case.

Within the past two years I have seen, in consultation, four cases of metastatic purulent accumulation in the right pleural cavity, two of them following attacks of appendicitis and one an abscess at the right of the ascending colon, while the fourth came into the hospital with a diagnosis of an inflammatory process in the gall bladder. I made an autopsy on the case of perityphlitic abscess and found multiple abscesses throughout the liver and another at the base of the lung, which was doubtless the focus from which the empyema began. All of the other three cases were operated upon, but the patients died from general infection. I have seen, in my personal experience in general practice, one case where a serous exudate was removed from a patient, a young married woman, who had made a rather tedious recovery from a continuous fever of indefinite history. She came to the city and consulted me in regard to a cough and a painful condition in her right side. The cause of the symptoms proved to be fluid in the pleural cavity. In the course of the blood examination on account of the previous history, Dr. Shuts made a Widal test with positive reaction. A quart of fluid was drawn from the pleural cavity, in which typhoid bacilli were demonstrated.

While these cases do not all come strictly within the scope of this paper, they are referred to in order to emphasize the fact that the source of infection may be remote, having their origin as seen in the appendix, intestinal tract or the gall bladder.

The diagnosis of an exudate in the pleural cavity is, as a rule, not difficult when a systematic and thorough physical examination is made. The conditions with which it is most frequently confounded are pneumonia, pulmonary tuberculosis and tumors of the mediastinum and pleura. The diminished or absent respiratory murmur, diminished vocal fremitus and voice transmission, frequently enlargement of the affected side, with occasionally bulging of the intercostal spaces, flatness upon percussion, with a sense of resistance on the affected side, skodaic resonance, marked tympany at the apex in many cases, the so-called William's tracheal tone, obliteration of Traube's semilunar space in the left-sided exudates, especially in adults, and displacements of the heart, all taken together, point to exudates in the pleural cavity, in contradistinction to the other conditions mentioned above.

From my personal observation I am inclined to attribute the most frequent source of error to a misconception of the position assumed by the exudate. I have frequently observed physicians trying to establish a horizontal line for the exudate with the patient in the sitting posture, under the impression that the fluid will follow the force of gravity, while, as a matter of fact, this is the exception rather than the rule. The dulness is usually higher posteriorly, unless the amount of pus is quite large, owing possibly to the continued reclining position assumed by the patient and the tendency of the compressed lung to recede in the

direction of the least resistance. The much-discussed "S"-shaped line of Ellis, if present at all, is so variable from day to day as to be of minor importance. Nor can the character of the fluid be always determined with certainty. Chronicity, with chills and variable temperature, point rather to purulent exudates, although I have seen patients convalescing from an attack of pneumonia with none of these symptoms, and get up and carrying with them three pints of pus in the pleural cavity. It was my privilege, at one time, to listen to an able diagnostician devote two lecture hours on two consecutive days to demonstrating, by fine points of discrimination, why a pleural exudate in the patient before us must be serous rather than purulent. He reserved the puncture until the last in order to demonstrate carefully the signs of differentiation. Upon introducing the aspirating needle, he was surprised and not a little chagrined to obtain a thick, fetid pus instead of the serum that the symptoms and physical signs seemed to indicate. It should also be borne in mind that bronchial breathing and even a marked vesicular murmur may both be transmitted through considerable accumulations of fluid in the pleural cavity. Twice during the past winter have these phenomena been demonstrated in cases under my care; once in a case of empyema following pneumonia, from which a large quantity of pus was removed, and again, in a case of double chylothorax, where, with the assistance of Dr. Patton, I removed a half gallon of chylous exudate from the pleural cavity. While the careful clinician will attempt exactness in the interpretation of all symptoms and physical signs, these facts only emphasize the advisability of resorting to the comparatively harmless aspirating needle for the purpose of removing every element of doubt as to diagnosis.

In regard to the treatment, there can be but one course to pursue from the time the diagnosis is established, and that is the prompt removal of the exudate and thorough drainage of the pleural cavity. The long and tedious delay in recovery, in the cases which have fallen under my personal observation, has, almost without exception, been attributable to inaccurate interpretation of the character of the fluid and a consequent resort to doubtful and inutile methods to promote its absorption. With the means at hand, an exploration can be made with so little discomfort and danger to the patient that all doubt of the diagnosis should be promptly removed by an early introduction of the aspirating needle, in all cases where that procedure is indicated by the physical signs. An occasional failure to confirm the diagnosis in this manner, where the signs are not so pronounced, while it does not deter me from pursuing the same course again under similar conditions, has taught me to state frankly to the patient and family that the aspirating needle is to remove all doubt and is only preliminary to a more radical operation in case the diagnosis is confirmed. In a case where the physical signs seemed to leave no doubt as to the diagnosis, I saw a very eminent diagnostician make eight intercostal punctures before the suspected exudate was obtained. The possibility of error should not cause us to hesitate in employing promptly every means of establishing an early diagnosis, rather than subject our

patient to not only the continued suffering, but to the danger of the increasing accumulation and certain prolongation of convalescence.

It would appear unnecessary to emphasize this simple and comparatively harmless method of exploration, were it not for the fact that I have seen patients up and about, after an attack of pneumonia, where, upon examination, the signs pointed unmistakably to the presence of an exudate in the pleural cavity. These were not always in cases where the attending physician failed to recognize the condition, but where, owing to failure to obtain pus upon the first attempt, further exploration was abandoned, either from apprehension upon the part of the patient or diffidence on the side of the operator. In one case of six months' standing, following pneumonia, I introduced the needle in three different places with negative results, only to be called again a few days later to find my patient greatly relieved by the discharge of a large amount of pus through the bronchus. This patient had spent several months in Colorado in an attempt to recover from a supposed tuberculosis, but finally made a good recovery after Nature had come to the rescue. Again let me emphasize prompt action in order to remove every element of doubt as to diagnosis. When the existence of pus is established, free drainage is imperative. A number of methods of procedure are at our disposal and must be selected according to the history of the case and the conditions present. I shall only briefly refer to one or two embarrassing conditions that may arise after operating upon these cases.

In one of the cases referred to above, the patient was attacked with severe coughing and a rather alarming syncope, both of which would probably have been avoided had I withdrawn the fluid less rapidly. In operating before adhesions have taken place or the lung had become, in a measure, fixed, the entrance of air into the pleural cavity may cause labored breathing and, in one case of a right-sided pleurisy, in a young man of 17 years, on the morning following the introduction of the drainage tubes, I found the heart displaced still farther to the left than before the operation and an apparently almost complete collapse of the lung with increased dyspnea. This condition gradually disappeared and the patient made a good recovery. The negative pressure devices of Perthes and Van Hook for syphon drainage are certainly ingenious and, in two instances, I have regretted not having resorted to their use. These instruments have been described by their authors in the medical journals, and I will not consume your time in discussing their very apparent merits. In all later operations at least, resection of a rib at a point most favorable for drainage has the almost unanimous approval of the profession. A few years ago it was my custom, in the older cases, to wash out the pleural cavity and introduce an emulsion of iodoform. A few operators used, at this time, saline solutions, one washing out after the operation, but if the lung is capable of expansion the vast majority of uncomplicated cases progress favorably under thorough drainage, without any other treatment.

As such a large number of empyemas follow pleurisy and pneumonia, I have almost entirely abandoned the cumbersome and exceedingly

questionable jackets, poultices and pastes used in the treatment of these diseases, in order to make daily examinations, so as to detect, at the earliest moment, any accumulation in the pleural cavity. I feel confident that this method, if persisted in by all of us, would materially reduce the mortality.

GENERAL SYMPTOMATOLOGY AND PHYSICAL SIGNS OF PLEURITIS.*

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Systematic discourses on pleuritis are accustomed to make a distinction in the symptomatology between the dry and exudative forms, pleuritis sicca, and pleuritis humida. While it is quite true that some generalized pleurisies run their entire course with little or no exudation of fluid, yet in the majority of cases they represent successive stages in the same process. In the average case of pleuritis the scene is opened by slight chilly sensations, usually repeated several times, but only in the severest cases attaining the dignity of a well-marked rigor. Following the chill, the temperature rises with moderate rapidity. While on the one hand rigors are uncommon, we have, on the other hand, a very considerable number of cases where the initial chilly sensations and subsequent rise of temperature are so slight as to make but little impression on the patient. We have all seen cases of pleuritis, with considerable fluid present, in which the subjective symptoms had been very slight, and the patient explained them by saying that he had caught a slight cold. In a case which recently came under my observation, a young woman in apparently perfect health was attacked by what her family physician took to be a simple cold. This lasted for nearly two months, without either fever, pain or dyspnea ever reaching such a point as to lead her to consider herself more than slightly ill. At this time a feeling of weakness led to another examination by her physician and the removal of five liters of fluid from her chest.

The expression of the face shows nothing characteristic, except a slight pallor or in a small number of cases cyanosis. Children may react, with high temperatures, to a very slight pleuritis, while, on the other hand, cases with diabetes, Bright's disease or carcinoma may have absolutely no rise of temperature. At the very beginning in a typical case there is a sharp, stabbing pain, beginning with the affected side and radiating to the back or around towards the median line in front. This stabbing pain is usually felt either during the entire inspiration or during one phase of it, and is, of course, greatly intensified by coughing. Cases are not so very rare where the pain is referred largely to the sound side. As Gerhardt has suggested, these cases are probably due to nerve anastomoses,

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although the latter have never been anatomically demonstrated. A point frequently overlooked in text-book discussion of pleuritis is the fact that a typical pleuritis may set in with no pain in the chest at all, but with well-marked abdominal pain, which may be referred to the gall-bladder or inguinal region. These abdominal cases of pleuritis are the exact counterpart of the abdominal cases of pneumonia, and so acute and sharply localized may be the abdominal pain that it has lead, in many instances, to the diagnosis of appendicitis, cholecystitis, etc. I know personally of one case where the abdomen was opened, and many more are recorded in the literature. I have elsewhere called attention to these cases, which only emphasize the correctness of Austin Flint's dictum that the examination of no case is complete without an examination of the thorax. The pain may assume one of two characters: first, and most commonly, of the pleuritic type proper, that is produced by the friction of the inflamed pleural surfaces against each other; second, it may be of a typical neuritic character and simulate closely an intercostal neuralgia.

The position of the patient is fairly characteristic. In the first stage the patient lies on the sound side. This rule has, however, many exceptions. The respirations show striking changes. They are considerably increased in frequency and of a short, staccato type. On the affected side the excursions of the chest are much smaller, and one may occasionally notice that the inspiration starts in later on the affected side. When the exudation becomes marked the patient lies on the affected side. Dyspnea may now become well marked, even to orthopnea, as, by sitting up in bed, the lung is, to a certain extent, unburdened of the weight of the fluid. Cough is an almost constant symptom and is of a particularly irritating variety, becoming much lessened when the leaves of the pleura are separated by fluid. Change in position is very apt to increase the cough. Expectoration is, in uncomplicated cases, practically absent. In the most severe cases a local edema may be noticed over the affected area of the chest, due to the direct propagation of the inflammatory process from pleura to subcutaneous tissue.

The temperature range in pleuritis is moderate. At the onset the temperature rises to 102° or 103° F. and remains at or about this height until the commencement of absorption, at which time it gradually declines. In a few cases, pleuritis acutissima, the temperature may rise to 105° F. These are cases which usually eventuate rapidly in empyema. The pulse range is moderate in frequency, rarely exceeding 100. In some cases it may be more rapid than would correspond to the degree of fever. The pulse tension shows only slight changes. Rosenbach remarks on the striking constancy of the blood pressure, even with exudates of considerable size. This is not necessarily a proof of normal conditions of circulation, inasmuch as with increased action of the vasomotors a diminished volume of blood in the arteries may be compensated. These considerations make it plain why it is that in a considerable number of cases of pleuritis, especially those with large exudates, we find symptoms of venous stasis. The pulse is of normal tension, but of small volume, and the venous system correspondingly overfilled. If cardiac insufficiency develops, symp-

toms of general venous congestion soon show themselves. We must bear in mind that circulation is not only impeded by pressure on the lungs, but also by the pressure of large exudates upon the heart and great vessels. The heart itself expands against higher external pressure than normal, and, all these taken together, make it very plain that the mechanical difficulties, which impede the circulation, are very considerable. The well-known fact that in large exudates a sudden active movement, such as sitting up in bed, may occasionally produce a fatal collapse is thus readily explicable. The *pulsus paradoxus* may be frequently observed, but has no especial significance nor importance. The urinary symptoms do not differ from those of any acute febrile process. The course of an acute serofibrinous pleuritis is not especially characteristic. In a mild case, at the end of a week, the temperature subsides and the effusions commence to be absorbed. With greater effusions, extending as high as the third or fourth rib, an average course would be from two to three weeks. In left-sided effusions the most reliable indication of commencing absorption is the increase in size of the Traube's space. The blood findings are simple and consist, in the majority of cases, in a mild leucocytosis, 10,000 or 15,000. In the tubercular cases this is wanting.

Physical Signs.—**Inspection:** In the first stage the affected side may be slightly but plainly drawn in as the result of the spasmodic contraction of the muscles on that side endeavoring to limit respiration of the affected side as far as possible. In the second stage the affected side is distinctly distended as a result of the increased intrathoracic pressure. The vertebral column may show slight curvature in the corresponding direction. If the effusion is of any considerable size, the displacement of the viscera may be plainly seen. The apex beat is no longer in its normal place, the liver is pushed down, and the epigastric pulsation may be seen to be greatly increased. Under favorable circumstances, in thin individuals, the lower end of the liver may be plainly visible, and in a left-sided effusion the left half of the liver may be pushed down until the lower margin is horizontal, or even below the level of the right lobe. In a right-sided pleurisy the reverse holds good, and the lower margin is sharply oblique from the right below upward and to the left.

Palpation.—The most characteristic phenomenon is the pleural rub, produced by the friction of the two inflamed surfaces. When very soft it can not be felt. It customarily disappears with the development of the effusion. It is ordinarily most plain at the margin of the effusion, and particularly in front and in the axilla, where the excursions of the lung are greatest. Pressure on the thoracic wall may increase it, as does also deep inspiration. The tactile fremitus is entirely absent over the lower portion of the effusion if this be only of moderate size. In children, however, quite fair-sized effusions may exist and the tactile fremitus be still present. In a typical case with considerable fluid present, the behavior of the tactile fremitus is characteristic. Below, where the fluid layer is thickest, it is absent, gradually increasing until it may be even intensified in strength at the upper margin, where the compressed lung conducts the

vibrations better. Some authors have stated that fluctuation may be obtained. I have never been able to make this out.

Percussion.—In the first stage this is negative. As soon as any considerable quantity of fluid is present dulness may be obtained, increasing in intensity to a wooden flatness below if the fluid layer be thick. Just below the clavicle, a Skoda's resonance, a peculiar, somewhat tympanitic note, is obtained, due to the relaxation of the lung tissue. The Wintrich's change, on opening the mouth, can not be elicited. It is often assumed that very small quantities of fluid give rise to the characteristic physical signs. Every one who has had much experience, and who has paid particular attention to this point, recognizes the fact that small quantities of fluid, 150 or 200 c.c., give rise to no physical signs. It is only when the amount of fluid exceeds 200 or 300 c.c., and then only under favorable conditions, e. g., thin thoracic walls, that dulness and the other characteristic signs can be elicited. In order to elicit absolute flatness, a fluid layer, having a thickness of from 5 to 7 centimeters, must exist at the spot percussed. Where flatness exists it is accompanied by a feeling of greatly increased resistance. The boundary line of the dulness is usually a curve, with the convexity upward. With light percussion and a medium-sized effusion, the line begins lowest behind, making an S-shaped curve upward toward the axilla, and then extending down in a straight line to the sternum. This applies only when the patient is in the erect position, Ellis' line. On the right side the flatness merges into the liver flatness. On the left side Traube's semi-lunar space may be diminished or obliterated. Occasionally, in medium-sized effusions, the mobility of the fluid may be brought out by first percussing in the erect and then in the recumbent posture. This is regarded as an infallible sign of fluid, but is by no means always to be elicited. Two other phenomena of percussion should be noted here, as they are highly interesting from a theoretical standpoint, although of almost no practical importance. They are: 1. *bruit de pot fele*. When the exudate is of considerable size, one can hear quite plainly, in the upper and anterior intercostal spaces, typical cracked pot resonance. This is due to the relaxation of the lung parenchyma. If this relaxation goes on still further, a dulness develops. 2. In very large exudates, where the lung is markedly compressed above the fluid level, percussion in the second intercostal space will give at times a markedly tympanitic note, the so-called Williams' tracheal tone. This phenomenon may at times be found in other conditions, such as pneumonia of the upper lobe, and is really nothing more than the percussion note of a large bronchus, obtained through an overlying consolidation. The Wintrich's change of tone may here be often obtained.

Mensuration.—Mensuration shows the increase in size of the affected side.

Auscultation.—The pathognomonic sign is the pleural friction rub, which can be heard in many cases where it can not be palpated. It may occur only in inspiration, or only in expiration, frequently during only a part of inspiration. If the pleurisy extends to the vicinity of the heart, this will, of course, be influenced by the contractions of that viscus, and

we have a pseudo-pericarditis, or a pleuro-pericarditic friction rub. Over the entire chest inspiration is apt to be jerky and somewhat diminished over the entire affected side. This initial enfeeblement of respiration is due to the pain attendant upon inspiration, and differs from the diminished breath sounds in the stage of effusion in that it is heard over the entire side of the chest. With the effusion, the breath sounds grow less and less and show the same characteristic behavior as the percussion note, i. e., the breath sounds are only slightly impaired above, growing less and less audible below as the layer of fluid grows thicker.

A most interesting phenomenon is the occurrence of distant bronchial breathing, when the fluid attains a considerable size. The compression of the lung, caused by the fluid, produces the necessary physical conditions for bronchial breathing, and this may be heard in some cases over the fluid, apparently coming from the depths of the chest, which, as a matter of fact, it does. In children the bronchial breathing may be so loud as to lead to the diagnosis of pneumonia. Over the sound lung the breath sounds are loud and harsh as the result of the dyspnea. On auscultation of the voice, which is particularly valuable, we find the corresponding signs. With even small effusions there are weakened voice sounds. Under those conditions, where we hear bronchial breathing, we may have a beautifully demonstrable bronchophony. This may occasionally take on a bleating quality, egophony. One would suppose, *a priori*, that the whispered voice would never be heard over an effusion. This is, however, not true. Bacelli has called attention to the fact that the whispered voice can be heard with great plainness, over quite large effusions, so long as these remain serous. In purulent effusions the whispered voice is absent, due probably to the enormous numbers of cellular elements in the fluid, which interfere with the sound propagation.

The Roentgen pictures are characteristic, but of small practical importance, except in the diagnosis of interlobar pleuritis.

With the absorption of the effusion, a leathery, creaking friction rub may again be heard when the leaves of the pleura come in contact with each other (*redux-crepitus*).

Pleuritis Interlobaris.—Occasionally fluid may accumulate between the upper and lower lobes of the lung. These cases are most puzzling. The physical signs are often obscure and consist in a band of dulness, corresponding to the line of separation of the two lobes. The majority of these cases are purulent, and rupture into a bronchus is not infrequent. These cases are rarely correctly interpreted without exploratory puncture.

Pleuritis Diaphragmatica.—These cases are rare, but I have seen a few exquisitely marked cases. The leading symptom is intense pain of a stabbing character, on breathing, with nothing in the physical examination to account for it. Considerable quantities of fluid must accumulate before the physical signs of effusion are manifest. Icterus is not infrequent in these cases, and has its origin in two facts: 1, the greatly diminished diaphragmatic action, which is an important accessory cause in the maintenance of the bile flow, and, 2, the extension of the inflammatory process to the liver.

Encapsulated Pleurisy.—In rare instances the effusion may be encapsulated in some atypical place, although by far the commonest condition is to have an encapsulated pleurisy remain as a residue of a considerable-sized effusion. The physical signs consist in a localized dullness, with the corresponding changes in the breath and voice sounds. A circumscribed friction rub may often be obtained. The cases are difficult of correct interpretation without exploratory aspiration. It is in the atypical cases, particularly the interlobar and encapsulated forms of pleurisy, that the Roentgen picture may be of considerable diagnostic value.

Resorption of the Exudate.—Pleuritic adhesions: Resorption of the exudate is characterized by a gradual return of the above-mentioned physical signs to the normal. This proceeds very slowly, and in particularly severe cases a very long time may elapse before the percussion note comes back to the normal. A complete *restitutio ad integrum* occurs only in the smaller effusions. After practically every large effusion some degree of thoracic deformity is left, due to the contraction and organization of the fibrinous exudate. This shrinking (*Schrumpfung*) of the exudate leads to a drawing in of the chest upon the affected side, particularly in the lower lateral portions of the thorax, and this phenomenon reaches its maximum in children or youths of delicate build. The circumference of the chest on the affected side may be diminished by some centimeters, the ribs are drawn closer together, the scapula is approximated to the vertebral column, the anterior portion of the chest is flattened, and, lastly, scoliosis develops. A moderate dullness and a diminution of vocal and tactile fremitus remains, due not to persistent fluid, but to the fact that the adhesions which remain are of sufficient thickness to produce these physical signs. On the opposite side a vicarious emphysema may develop. A very common result of this combination of pleural adhesions on one side with vicarious emphysema on the other is the production of hypertrophy of the right heart, with subsequent dilatation; cardiac insufficiency, and the long train of symptoms of venous congestion which follows in its wake.

PERICARDITIS; GENERAL SYMPTOMS AND PHYSICAL SIGNS; MECHANICAL EFFECTS OF FLUID DISTENTION OF THE SAC.*

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Little has been added to our knowledge of the manifestations of acute pericarditis since Stokes elaborated the significance of the pericardial friction murmur in 1831, but the manifestations of chronic adhesive pericarditis, on the other hand, are even yet ill defined and not well understood, and the diagnosis of chronic adhesive pericarditis is at the present time only occasionally to be made with any degree of positiveness.

Pericarditis is an important pathologic process and plays a much

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larger rôle in the etiology of heart diseases than is generally ascribed to it. There is always more or less myocarditis associated with pericarditis, and Broadbent goes so far as to state that many of the symptoms which are ordinarily ascribed to pericarditis are in reality due to myocarditis with cardiac dilatation.

Symptoms are, in the main, due either to the direct inflammatory involvement of the pericardium or of the contiguous structures, such as the myocardium, the pleura or the mediastinum, with involvement of the neighboring nerve trunks; or to pressure of a pericardial effusion; or to the results of a pericardial synechia. The varied and interesting clinical picture of chronic adhesive pericarditis, especially in those cases where the pericarditis is but one of the manifestations of a multiple serositis, has especially attracted the attention of clinicians during the past few years. Of the subjective manifestations of pericarditis pain is the most frequent, although pericarditis is more often painless than painful. This is in direct contrast to the painfulness of pleurisy. Pain is usually present in dry pericarditis, and is ascribed to the rubbing of the rough pericardial surfaces one upon the other. It may disappear in a few hours with the accumulation of effusion, but this not without exception.

In the more chronic forms of pericarditis pain may be due to the direct involvement of the nerve trunks in the inflammatory process, as, for instance, the vagus, the phrenic or the periaortic plexus. With effusion, pain may be due to the direct pressure of the distended sac upon the surrounding organs, such as the heart muscle, the lungs or esophagus. Pain may be due to secondary manifestations of adhesive pericarditis, as the pain of passive liver congestion. Pain may be retrosternal, precordial, epigastric or abdominal. It may be continual or paroxysmal, or may assume the type of an angina pectoris, with radiation to the shoulder, the trigeminal region or to the abdomen, simulating the pain of gastric ulcer, gallstones or peritonitis (Neusser, Ortner, Stokes, Gibson).

Neusser is of the opinion that coronary sclerosis does not entirely explain all of the phenomena of true angina pectoris, and he ascribes to pericarditis, with its involvement of the periaortic plexus, a rôle in the production of angina pectoris in many cases. In plexus angina of pericardial origin, as taught by Neusser, the radiation of the pain is without rule, and may be through any of the many communicating branches to the brachial or cervical plexuses, or through the vagus to the abdominal region. The pain may be paradoxical, in that it may start at the hand and run up the arm and across the shoulders (Roseman).

Vagus involvement may be manifested by slow pulse, globus, larynx spasm, singultus, dysphagia or gastric phenomena, such as vomiting, belching or gastric pain (Neusser). Such vagus involvement may be noticed in some cases of acute dry pericarditis, as well as in pericarditis with effusion. Pain may be elicited, in some cases, by direct pressure over the course of the vagus and phrenic nerves in the neck, in the peristernal line or by pressure over the diaphragm.

Subjective manifestations, other than real pain, are often prominent, such as precordial uneasiness, oppression, or pressure, tightness, palpita-

tion or an ill-defined distress and anxiety in the chest. Hyperesthesia over the precordial and epigastric regions is common, and may be out of all proportion to the objective findings. The slightest irritation, even the pressure of light bed covering, may be intolerable. Dyspnea is a frequent symptom, and is variously ascribed to the accumulation of fluid interfering with cardiac and pulmonary activity, to myocarditis, to venous engorgement or to pressure on the vagus or arterial trunks. It is usually a prominent symptom, when an effusion accumulates rapidly, and may be absent even in cases of immense effusion of slow development.

Dysphagia is a rather uncommon symptom, and is ascribed to direct pressure upon the esophagus. Loss of voice may be due to paralysis of either the right (Eichhorst) or the left (Gibson, Sibson, Stokes, etc.) recurrent laryngeal nerves. Fever is not at all distinctive of pericarditis, and while often present, it assumes the type that is characteristic of the particular form of infection present. Fever may precede the friction rub by a few days in rheumatic pericarditis, especially when the fibrin deposit begins posteriorly. Fever may rise with the formation of a large effusion, but this is not without exception.

On inspection, the manifestations noticed are those due to either effusion or chronic adhesive pericarditis. In effusion, one may notice a precordial bulging, especially in children; the left chest may lag on inspiration; the first rib sign of Ewart may be present, and the intercostal spaces may be widened. The apex beat may be present or absent. When present it may be inside the area of absolute dullness; when absent, it may often be made to reappear when the patient leans forward in a sitting position. Systolic retraction, at the apex or on the left lower posterior axillary region (Broadbent), may be present, but is in no way pathognomonic of either concretion- or accretion-cordis. This sign may be simulated in cases of hypertrophied heart, in which the increase of negative intrathoracic pressure at systole causes a retraction of the intercostal spaces.

Ascites appearing with a minimum or no edema of the lower extremities—the so-called *ascites præcox* (Neusser)—speaks especially for a pericardial obstruction to the return venous circulation. This form of ascites is, however, only suggestive of chronic adhesive pericarditis, and is in no way peculiar to it. This was beautifully illustrated by a case that went to postmortem recently in Wesley Hospital. The patient, a young man, had gone to Mercy, Cook County, or Wesley Hospitals some twenty odd times, suffering from passive congestion of the liver and ascites of maximum degree. Edema of the legs was minimal or only moderate, until the terminal attacks, when it became prominent. The heart was negative except for a relative mitral systolic murmur, which would disappear each time after a few days' rest in the hospital. Each time the ascites and dilated liver would disappear rapidly under rest and profuse catharsis, so that the patient would return home after a few days' hospital care in fairly good condition. The case was studied by many clinicians at the various hospitals, where the patient was a familiar figure, and the consensus of opinion was that the condition was produced by some obstruction to the return venous circulation, mechanical in

nature, probably pericardial. The patient had a terminal left-sided hemiplegia and left-sided hydrothorax. The postmortem showed myocarditis and cardiac dilatation of maximum degree, the pericardium and hepatic veins were normal throughout. This case was of especial interest, in that it illustrates the difficulty one encounters in making a definite diagnosis of chronic pericarditis in some cases, and that such diagnoses should only be made with reserve.

On palpation, a pericardial friction fremitus may be demonstrated. In cases where a friction rub may be heard. It gives one the impression of being superficial, and has no definite focus of intensity. It varies much as to seat and extent, and is, in general, of the same significance as the pericardial friction murmur. The pulse of pericarditis is not destructive; it may be empty and compressible where cardiac activity is interfered with. A pulsus paradoxicus is said to indicate pericardial synchia, but this manifestation occurs in so many other conditions, as well as in health, that it is of little diagnostic value.

On percussion, in cases of fluid accumulation, the area of absolute dulness is characteristic. With small amounts of fluid, of 100 c.c. or over, the dulness appears at the base of the heart, the right liver-heart angle becomes obtuse (Ebstein), and the right cardiac edge loses its normal convex outline, as may be demonstrated upon careful percussion.

With greater accumulations of fluid, the well-known triangular area of dulness, with base directed downward and blunted apex upward, is usually present. That this is not always true of large accumulations of fluid, is emphasized by Thayer, in an interesting article published recently in the Johns Hopkins Hospital Bulletin (May, 1904), in which the dulness appeared in the left side of the thorax in an atypical manner, and also by a case described by Ortner, out of Neusser's clinic, in which the accumulation of fluid was mostly posterior. The area of cardiac dulness may usually be increased by having the patient lean forward, and an area of dulness may sometimes appear posteriorly, at the angle of the scapula, as described by Bamberger.

On percussion one is often able to demonstrate a movable line of lung resonance, upon deep inspiration, about the borders of cardiac dulness, a point which speaks against *aerctio-cordis*.

Since the discovery of the pericardial friction murmur by Collins, in 1824, the friction rub has generally been considered the most characteristic manifestation of pericarditis. It is not absolutely pathognomonic of pericarditis, yet, when it is present, in its typical form, it usually means pericarditis. It is variously described as rubbing, purring, churning, musical, metallic, creaking, harsh, soft, etc., but these adjectives can not in any way convey an accurate impression of its characters. Its peculiar acoustic properties can not be described. It is so characteristic that when it is present in its typical form it is rarely to be confused with any other clinical manifestation. The one thing which is more characteristic of it than any other quality is its variability. It is variable as to its time of appearance and disappearance, variable as to location and quality of sound. The area over which it is best heard varies, not only from day

to day, but, in some cases, from hour to hour, and occasionally the rub may be present but a few hours altogether. It may vary in rhythm. It may be a simple to-and-fro murmur one day, and a triple murmur the next, and, on the other hand, its rhythm may vary with the successive heart beats under the stethoscope, with or without change of position of the body. The pericardial murmur seldom corresponds exactly, as to rhythm, with the sounds of the cardiac cycle. It is more apt to occur in late systole, or late diastole, or may be interposed between systole and diastole. This is due to the fact that the pericardial friction is at its maximum at the time of maximum expulsion of blood, which is late in systole, and it is also due to the fact that the rhythm of the pericardial friction murmur depends to a great extent upon the accidental position of the deposit of fibrin.

It may be single, double or multiple. A single friction rub is usually systolic, but it may, in rare instances, be diastolic (Ortner). A double murmur is usually presystolic-systolic. A triple murmur may be presystolic-systolic-diastolic. Multiple murmurs may be due to lateral motion of the heart, or to a split ventricular systole. The pericardial friction rub is described as being "superficial" and "near-to-the-ear." It is not usually propagated to any great distance from its point of production, as is so characteristic of endocardial murmurs. Pressure of the stethoscope often increases its intensity. It is influenced by gravitation, and may be heard only when the patient assumes certain positions, or may be intensified when the patient leans forward in the sitting position. It is modified by respiration, usually being intensified at the height of inspiration, but occasionally at the height of expiration. It is increased when intrathoracic pressure is increased, as in the well-known Valsalva experiment of taking a long breath, closing the glottis and exerting pressure by contracting the abdominal muscles, thus increasing the pressure of the pericardial surfaces one on the other, favoring the production of a pericardial rub.

As to location, the pericardial friction rub is more often heard at the base of the heart, over the sternum, in the third or fourth left intercostal spaces near the sternum, or in the tricuspid region. It may, in rare cases, be heard only at the apex, especially late in the course of the affection. This is due to the fact that the apex, being the most movable part of the cardiac surface, may be the only part which has escaped pericardial fixation. In the early stages of pericarditis, the friction murmurs are never heard beyond the cardiac region. While pericardial friction murmurs may be heard in more than one spot, yet they are almost always confined to the cardiac area, and are not to be heard in the back. There is no definite focus of intensity (Sibson), as is so often present in endocardial murmurs, yet they are usually distinct over the whole audible area.

The common belief that when the exudate appears the friction rub disappears is erroneous, in that a friction rub at the base may often be present even with immense accumulations of fluid. The usual teaching of the German school, following the lead of Skoda, which is that on

account of the fact that the heart has a greater specific gravity than that of the surrounding fluid, the heart gravitates to the posterior part of the sac, in cases of large effusion, is erroneous, at least in some cases, as is conclusively shown by Thayer in the article previously quoted. The relation of the heart to the chest wall is not materially changed by the accumulation of large amounts of fluid, it being held in about the normal position by the great vessels at the base. One of Thayer's cases, with an accumulation of 1,200 c.c. of fluid, still showed the heart in contact with the anterior chest wall. This being true, the presence of a friction rub does not, therefore, preclude the presence of a great accumulation of fluid.

On auscultation about the periphery of cardiac dulness, in cases of effusion, one may hear crepitant râles on inspiration, which are the expression of atelectasis at the compressed lung edge, about the dilated pericardial sac. This finding may, in some cases, be used to outline the extent of pericardial distension, especially where the precordial dulness is masked by emphysema (Neusser).

DIAGNOSIS OF EFFUSIVE PLEURISY AND PERICARDITIS.*

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The recognition of effusions in the pleural and pericardial cavities may be very easy or exceedingly difficult, but it is always important. In this paper no attempt will be made to cover every phase of the subject, in order that as much time as practicable may be bestowed upon those features which are of the greatest importance. The large majority of the cases of pleurisy with effusion are tubercular or pneumonic, although the other varieties should not be forgotten. In the tubercular series of cases, the pleurisy may be the initial symptom; it may occur early, or before much destruction of pulmonary tissue has occurred; it may appear as cavities approach the pleural surface, or as a terminal feature. In the first form, the patient is usually suddenly seized with an acute pain in the side of the chest, which is increased by coughing or deep inspiration. The pain, after a few hours, gradually subsides, is noticeably lessened in acuteness at the end of 24 hours, is markedly better at the end of 48 hours and has nearly or quite disappeared by the end of the third day. There is, usually, a repressed cough, which may be so slight as to escape ordinary notice; it may be absent. Expectoration is not a symptom. Moderate or slight fever is present during the first few days, and may persist for a week or more. After a few days dyspnea upon exertion may appear, slight in most cases, moderate in some, severe in a few and absent in some others. This symptomatology has direct bearing upon the diagnosis, inasmuch as all such cases should be subjected to such careful physical examination as will reveal pleuritic effusion if present.

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The pleural friction rub will have been sought for and probably detected, which confirms the fact of a pleurisy. If the affected side be examined in a good light, it will be noted that the respiratory excursions are noticeably impaired, from slight retardation to nearly total immobility, due to the induced pain or slight effusion in the first instance, and to a distending quantity of liquid in the second. There will be no bulging of the intercostal spaces, unless there is a very large effusion, one which inhibits diaphragmatic movements upon the affected side. If early, deep pressure is made in the intercostal spaces, pain is induced; by such palpation the surface area of the affected pleura may be outlined. If effusion is present in any considerable quantity, there is dullness on percussion. In outlining the area of dullness, light or moderate percussion should be employed; heavy strokes bring out modified resonance from any permeable lung which may protrude into the liquid. In moderate effusions, the upper border, as outlined by percussion, is an irregularly curved one; it changes slowly and slightly upon change of position. In massive effusions, the note is not materially altered by varying the force of the stroke; the upper line of dullness is straighter; the diaphragm is motionless and depressed, with consequent depression of the liver, if the right side is involved, and displacement of the heart to the right, if the left side is affected; the intercostal spaces may bulge. Respiratory and vocal fremitus are more or less impaired in proportion to the extent of the effusion; in massive ones, they are absent, except in children, in whom they may persist.

In the presence of these symptoms and signs, it is reasonably certain that a serous effusion is present, but this should be verified by puncture by a hollow needle attached to an aspirating apparatus, which, for purely diagnostic purposes, may be that of a large hypodermic syringe. The strictest antiseptic precautions should be taken to prevent additional infection. The puncture should be made where dullness is most marked, and at the greatest distances from resonant areas, provided, always, that it is made sufficiently high to avoid the diaphragm. The seventh or eighth interspace, a little in front of the angle of the scapula, is a favorite and appropriate location. Sufficient liquid should be removed for microscopic and other diagnostic examinations.

In pneumonic pleurisy with effusion, the diagnostic difficulties are notably increased. The liquid poured out may be small or moderate in quantity and lying immediately in juxtaposition to solidified lung, with the result that a diagnosis by percussion, and possibly by auscultation, may be impossible. This may be especially true in effusions at the base. In these cases, the liquid may appear early, and this probably is oftener the case than is generally supposed. The fibrous deposits upon the visceral and parietal pleura, with its strong and early tendency to form close adhesions, has an inhibiting influence upon effusions at a late period of the attack. So far as I know there are, with one exception, no symptoms indicating the occurrence of effusion; it must, therefore, be detected by physical signs. The pain follows the course common to all cases, with or without effusion; it gradually diminishes in acuteness and

severity and usually disappears within three days. With extended involvement of lung and pleura, the pain persists or recurs. The cough and expectoration pursues the ordinary course, as does also the temperature range. It is rare—I have never seen it—for an effusion in connection with pneumonia to be so large, early in the disease, as to cause bulging of the intercostal spaces and depression of the liver. In a single instance, I have seen the heart displaced toward the right with consolidation of the upper lobe of the left lung and with effusion at the base, with compression of the lower lobe. In this case, frequent observations revealed the rapidly gradual accumulation of liquid and the disappearance of vesicular breathing, some bronchial breathing remaining audible in the back. In this case, the flaky serous effusion of the fourth day became the lightly purulent one of the day following. Such cases must be rare. The exception to the rule, that symptoms are not significant, lies at the end of the attack; the fever does not subside at the usual time, or, if it does, it speedily reappears. Under these circumstances, the condition is often called unresolved pneumonia, or relapsing pneumonia. The symptom is so significant, however, that no such case should be left with such a diagnosis, without a most painstaking exploration of the pleural cavity. In the vast majority of instances, pus will be found. In these cases, the effusion is not infrequently sacculated, either between the visceral and parietal pleura, or interlobar, and, in either case, the difficulties of diagnosis are greatly enhanced.

The physical signs are similar to those found in tubercular cases. The friction rub may be oftener obscured; the respiratory excursions are earlier and more noticeably impaired. The area of involvement may be accurately outlined by intercostal pressure. Dulness on percussion may be due, wholly or in unmeasurable degree, to the pulmonary consolidation. It has been asserted that the sensation given to the finger in pulmonary consolidation is that of greater resistance than in simple effusion, and I have thought that such were the sensations conveyed to my finger, but, with more prolonged experience, I am not sure that much stress should be placed upon the fact, if fact it be. The limiting line of dulness seldom follows that of tubercular effusion, due probably to the disturbing factors of character of liquid present, the more or less numerous adhesions formed, the extent and location of the pulmonary consolidation, etc. Auscultation discloses diminished breathing or absence of respiration, but here, again, are to be encountered the disturbing factors of pulmonary consolidation, as may be readily understood. It follows, therefore, that in pneumonic pleurisy with effusion we must rely for diagnosis mainly upon exploratory aspiration. In every case of pneumonia in which there may be detected symptoms or signs of pleuritic effusion, recourse should be had, promptly, to this measure. In the vast majority of cases, the period at which the injury becomes pressingly pertinent is during the second week of the attack. In the presence of symptoms such as above mentioned, the diagnostic aspirating needle should be used intelligently and painstakingly until the presence of liquid in the pleural cavity, free or sacculated, has been proven or tentatively dis-

proven. It is important to note that if liquid is not obtained, even after many punctures, the evidence is not conclusive that it is not present. The heavy and viscid character of the effusion may, rarely, be the obstacle, even when the cavity containing the liquid has been penetrated. The most frequent difficulty lies in the failure of the needle to penetrate the thick false membranes which line the parietal pleura, or, these becoming detached, may be pushed in front of the needle. In either instance, failure may result, or more careful technic may surmount the impediment. Although in pneumonic effusion, as in tubercular cases, the point where the liquid is most likely to be encountered is in the seventh or eighth intercostal space, posteriorly, near the angle of the scapula, yet the rule has so many exceptions that this location should be selected solely because here the dulness on percussion and absence of breath sounds may be most profound. If liquid is not found at the base, in the presence of indicative signs, the interlobar spaces should be very thoroughly explored. In one of my cases, the area of most pronounced dulness was found high up in the axilla, and here, at a great depth, pus was discovered. In my opinion, there are no serious objections to making multiple punctures, but, in order to lessen the danger of infection from the surface, several pleural punctures may be made from one made in the skin. The needle should have a large bore, and the most scrupulous antiseptic precautions should be taken. Microscopical and cultural examinations of the removed liquid will give valuable information.

Pericarditis with effusion occurs especially in connection with rheumatism, scarlatina, pneumonia and tuberculosis. In rheumatism and tuberculosis, the effusion is nearly always serous. In scarlatina, it is also usually serous, but in some of the severest cases the liquid is thin, sero-purulent and very virulent. In pneumonia, a small, sero-fibrinous effusion is not rare. Diagnosis in these may be difficult or impossible, but, because of the natural history of these cases, this question does not often arise. The large and obtrusive pericardial effusions in pneumonia are usually purulent, although they may be sero-fibrinous. In any of the morbid conditions mentioned the pericardium should be subjected to frequent and thorough investigation, in order that early and accurate information may be had of the presence of such effusions, although those of large and dangerous character are not very common.

Passing over the symptoms, and such physical signs as may be obtained from inspection, palpation, etc., as affording information of but little value, and none which can not be obtained from other and more reliable sources, we come at once to those elicited by percussion and auscultation. In approaching this subject we should be careful to note the facts, regardless of theoretical considerations, which are, or may be, misleading. Note, for example, that the effusion distends the lower portion of the pericardium, notwithstanding the fact that it is of lower specific gravity than the heart.

By means of careful, light percussion it is possible to outline, with accuracy, the area of direct contact of the heart against the chest wall, and by heavier strokes to obtain dulness over that portion of the heart

which is covered by lung tissue. The outlines shown by these areas are well known and require no description. In this connection it is well to bear in mind that the apex beat of the heart corresponds to the lowest and extreme sinister aspect of the heart. Now, in pericarditis with effusion in detectable amount, the cardiac area of dulness is enlarged; at the lower portion it broadens out in direct proportion to the quantity of liquid present, giving rise to three of the cardinal findings of this condition, namely, the dulness is carried to the left distinctly beyond the apex beat of the heart, the area of dulness upon deep and superficial percussion are identical, because the thin tongue of pulmonary tissue which normally overlaps the left border of the heart is pushed to the side, and the abolition of the normal resonance in the cardio-hepatic angle at the right side of the sternum, a sign to which Rotch has called particular attention. With large effusions the borders of dulness are everywhere enlarged, exaggerated below, but very marked above also. The outline which is now presented is distinctly indicative of pericardial effusion, inasmuch as the appearance is unlike any other condition.

Auscultation reveals the apex beat within and above the extreme left and lower margins of dulness, and in addition the cardiac sounds are feeble and appear to be distantly located. The respiratory sounds do not lap over the line of dulness, even on deep breathing. These are important diagnostic features. In some cases of large effusions there may be heard, near the angle of the scapula, or somewhat anteriorly to this point, after the patient has been for a time in the supine position, distinct bronchial breathing; if he leans forward or occupies the prone position the bronchial breathing gradually gives way to crepitant râles. The bronchial breathing is accompanied by noticeable dulness, which changes to a more or less resonant tone on percussion with the appearance of crepitation. In some of these cases and in some others of large effusions there is to be found dulness on percussion between the angle of the scapula and the spine, as pointed out by Ewart.

The physical signs enumerated are found only when the pericardium is non-adherent. Should adhesions be present, either as the result of previous inflammation or during earlier stages of the current attack, the effusion may occupy surface cavities of greater or lesser extent and variously located. Such accumulations of liquid cause asymmetrical bulgings which may be difficult or impossible of diagnosis.

Puncture of the pericardium for diagnostic purposes is usually undertaken only in those cases with large effusions in which the diagnosis, from other signs, is already probable. It is, therefore, a confirmatory measure, ordinarily preparatory to operative treatment. The needle should be introduced in the left fifth intercostal space, as near as possible to the sternum. In very large effusions the puncture may be made in the corresponding space on the right side, or on the left side near the extreme border of dulness, outside the apex beat. The object, in any instance, being to enter the pericardial sac without wounding the heart.

It is to be regretted that the limits of this paper will not permit a fuller consideration of the subjects which have been passed in short re-

view, and that many important matters are entirely ignored. It must be said, however, that in this important field expertness in diagnosis can only be attained by careful observations made upon cases personally investigated.

TREATMENT OF PLEURISIES AND PERICARDITIS.*

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CHICAGO.

Infection plays a part in causing all inflammations of the pleura and pericardium. Unfortunately, we possess no means of specifically combating most infections and especially those which commonly affect these serous membranes. Therefore, radical or specific treatment is impossible. We must endeavor to ameliorate distress, to avert dangers and to treat symptoms. Inflammations of these structures are clinically classified as acute fibrinous, acute with serous effusion and chronic. The methods of treatment relied upon to-day are different for each of these groups of cases.

The prominent symptoms of acute fibrinous inflammation are pain, tenderness, cough and fever. Each of these or any two of them may be insignificant or wanting. Cough does not accompany pericarditis, unless the pleura and lungs are simultaneously involved. It may be an inconspicuous symptom even in pleurisies. In many cases fever is also slight or absent. Pain is the most constant and most striking symptom. Often it is of very moderate severity and needs no treatment or is felt keenly only when a deep breath is taken or when a patient coughs or sneezes. In such cases, applying adhesive strips on the affected side, so that deep inspiration is impossible, will ameliorate discomfort. Strapping, however, is not sufficient in the severer cases and must be supplemented or substituted for by other means. Heat, especially the moist heat of a poultice, is very comforting. But the frequent change of dressings needed to keep poultices hot is often a trouble and annoyance.

An ice bag is equally effective in pericarditis and, after the first feeling of coldness has been forgotten because the skin is benumbed, is not uncomfortable. It has to be renewed less frequently than the poultice. It is also much easier to maintain steadily a degree of cold than of heat. But, owing to the size of the thorax and its shape, it is impossible to apply a bag of ice so that it will stay in place and cover the thorax. It is also too heavy. However, rubber coils, through which water is kept flowing, can be used advantageously. As these coils are not commonly at hand, they are much less frequently used than poultices. In pericarditis I prefer a bag of ice to a poultice. It must not be forgotten that heat and cold produce other effects besides lessening pain, although that is the first noticed and is most striking. In pericarditis a bag of ice slows the heart, lessens fever when it is present and is believed to combat the vascular and

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nutritional changes which are a part of inflammation. Both hot and cold applications have a similar antiphlogistic effect.

The proprietary clay pastes are used very frequently. I believe them to be of doubtful utility, because, although they are applied hot and retain heat fairly well, they are not changed as often as they should be. Often they are allowed to remain for 12 or 24 hours upon the chest. It goes without saying that the paste is then and has been for many hours at the temperature of the body and has not been, in reality, a hot application. I have not been able to convince myself that they deplete, as is claimed, because of the hygroscopic property of the glycerin which they contain. A clay paste makes a useful poultice, but it must be changed frequently if the effect of a hot application is to be had. In passing, let me call attention to the pharmacopeal preparation called cataplasma kaolini, which any pharmacist can make and which is as good as any of the proprietary pastes and cheaper. Sinapisms will quickly relieve mild grades of pain and, because of the ease with which they can be prepared, are commonly employed. The more active cantharidal preparations are little better and are certainly not to be preferred to poultices or a bag of ice in these cases.

Blood letting, for such inflammations as pleurisy and pericarditis, is not resorted to in these days. But many treatises on this subject still commend the application of leaches to the chest. However, this practice, although efficient, has also fallen into disuse. In a few rare cases pain is so intense that morphin must be given by mouth or beneath the skin. It must be remembered that whenever morphin is used to relieve pain it should be given efficiently, but not longer and in doses no larger than is needed. When pericarditis is due to rheumatism, the salicylates should be used. It is rare, however, that pleurisy is caused by it or requires anti-rheumatic treatment. Opiates are needed oftener to lessen cough than to lessen constant pain.

When there is much fever, a feeling of well-being is acquired most quickly by promoting elimination from the kidneys and bowels. Ammonium acetate and potassium acetate and citrate are useful to prompt the kidneys and magnesium citrate, sulphate or sodium phosphate are good purges. The temperature is rarely so high or so constant as to make cold baths a necessity, but there is no objection to them when it is high. Bags of ice or cold water circulating through rubber tubes coiled upon the chest will often lessen bodily temperature as well as produce the antiphlogistic effects already alluded to and will make cold baths unnecessary. Chemical antipyretics are harmful if used day after day in such cases, for they lessen the oxygen-carrying power of the blood, increase cyanosis and interfere with normal metabolism.

When we have to do with acute inflammation with serous effusion, the treatment just outlined is the best during the first ten days, except in the rare cases in which the effusion is poured out with great rapidity and, therefore, suddenly compresses a lung or the heart. It is well in dry pleurisy and pericarditis to prescribe a dry diet in order to prevent the development of an effusion; and, when an effusion is demonstrable,

the same diet is required to prevent it from becoming great or to hasten its absorption. By a dry diet is meant a minimum amount of proteid and starch-bearing food, and, if possible, not more than two glasses of fluid daily. The latter should be taken occasionally in sips. The food must be restricted in amount and in kind, so that the fluid contained in it will not be great. Very little of fruits and other foods especially rich in water should be permitted. Such a diet as this is especially useful, and I might cite many cases illustrating its good effects.

However, much more will be accomplished if, at the same time that a patient is confined to a dry diet, elimination of fluids from the body is promoted as vigorously as possible. I have found nothing so uniformly useful for this purpose as purgation by elaterium. Clutterbuck's preparation is the best. It can be given in doses of grm. .008 to grm. .015 once or twice daily. Very rarely do I find patients made uncomfortable by it. Salines, especially magnesium sulphate, is oftener used, although I have not found it as efficient or generally as agreeable to patients. When salines are given they should be dissolved in as small a quantity of water as possible and should be given in doses sufficient to produce copious liquid stools. Diuresis and sometimes diaphoresis is resorted to as an aid in bringing about elimination, but neither is as efficacious as catharsis. Such diuretics as potassium citrate and acetate are the best and they should be given in full doses.

When there is a liquid effusion, pain is not felt, for the congested and often raw pleural or pericardial surfaces are separated. Nevertheless, blistering the skin over the affected part is useful, first, as an antiphlogistic measure and, second, to aid elimination. Cantharidal collodion or blistering plaster should be placed over the tenderest points, if any such can be found. These applications should be accompanied or immediately followed by fomentations, in order to promote the filling of the blisters and afterward the continued abstraction of serum from the surface thus made raw. This will accomplish best the second object of vesication, namely, the abstraction of fluid. From my own trials of this method of treatment I have been led to conclude that too little fluid is thus drawn off to be of much consequence. However, if there is tenderness over the affected part of the thorax or other evidence of persistent and considerable inflammation, the blisters do lessen it. Therefore, when there are such indications, I feel that blistering is desirable.

Many physicians apply externally tincture of iodine instead of cantharidal preparations. I have no confidence in its efficacy. It does not act so promptly nor so vigorously.

The iodide of potassium or sodium is of little use when the exudate is liquid, but when it is thick, fibrinous and cellular these drugs are beneficial, because they promote the more rapid absorption of such exudates. Under the same circumstances, calomel or other preparations of mercury given in moderate doses, repeated 3 or 4 times daily, are beneficial, for, as is generally conceded by clinicians, they stimulate the absorption of such exudates and lessen the liability of their being organized so as to make permanent, thick pleural or pericardial walls or adhesions.

When, in spite of treatment such as I have outlined, a pleural cavity or the pericardium is distended steadily more and more with fluid or after two weeks' duration an effusion is not absorbed, we are compelled to think of other means for its removal. Paracentesis is a safe, prompt and efficient one. If dyspnea is considerable and cyanosis is evident, paracentesis should be resorted to at any time; also whenever positive pressure is produced by the effusion, so that the heart is displaced and a lung greatly compressed. The fluid should be withdrawn by an aspirator or by trocar and cannula. If the effusion, even though it is considerable, causes no displacement of the heart and little dyspnea, paracentesis may be delayed for two or three weeks or sometimes even longer. However, if there is some persistent fever, and especially if the chest wall remains tender, it is not best to delay the withdrawal of the fluid more than two weeks, for under these circumstances there is usually a persistent pleural inflammation, which may lead to so great thickening of the visceral pleura as to prevent the perfect re-expansion of the affected lung. This deformity is less likely to be produced if the lung is permitted to expand before the pleura has grown too thick.

If, however, there is no fever and there are no tender spots between the ribs, and especially if the pleurisy is suspected to be tubercular, longer delay is permissible and even desirable, because tuberculous lesions, for the time being quiescent, are more apt to be kindled into fresh activity when the lung is allowed at once to re-expand and to become functionally active. Tuberculous pleurisy should be treated as other forms of pulmonary tuberculosis are by keeping the patient quiet, out of doors and by feeding as generously as the effusion permits. Treatment out of doors in a dry and moderately elevated climate will promote quickest recovery from the tuberculosis and quickest absorption of exudate. It will most certainly prevent the patient re-infecting himself with tuberculosis, which he is likely to do if he is treated indoors, in rooms imperfectly ventilated. It will also most certainly prevent infection by pus organisms, which are so apt to complicate such cases and hasten destructive changes in the lungs. If the fluid in either thoracic cavity is pus, it should be removed, not only promptly but also permanently by free drainage. This treatment is surgical and you will not expect me, in the present discussion, to describe it in detail.

We must be guided, in aspirating the pericardial cavity, by very similar rules. It should be done when the cavity fills with rapidity and produces cyanosis and pericardial distress. If these symptoms do not exist, it may be long delayed, although the effusion is great. However, when the pulse is weak, irregular or very rapid, or is become so, even if effusion has taken place so gradually as not to have caused much distress or cyanosis, aspiration is indicated. It is my rule, both in pleurisy and pericarditis, if symptoms are such as make it desirable to determine whether the fluid effusion is purulent or not by withdrawing some of it, to do so in such a way that as much of the fluid as possible can be abstracted at the time. For, if the patient must feel the discomfort of

the needle thrust into his side, it is well to use the opportunity to effect therapeutic results as well as diagnostic. The technique of paracentesis is so well known that I need not describe it anew.

Permanent pericardial adhesions can not be removed by treatment. They may be so slight as to cause no appreciable trouble or the bands binding the pericardial surfaces ultimately may be stretched so as not to interfere with the function of the heart. But they sometimes lead to a degree of cardiac hypertrophy and at last to cardiac weakness or even fatal asystole. Rest or graduated exercise, cardiac and general tonics are then needed to prolong life. The problem is one of treating the heart-muscle rather than the pericardium.

Retraction of the chest-wall, which follows pleurisy not infrequently, often can be prevented or corrected by a prompt removal of the patient to a dry climate in a mountainous country, where perfect and rapid absorption of exudate will be effected and fullest expansion of the lungs assured. So soon as convalescence is established, gentle walking exercise should be encouraged and, later, carefully graded hill climbing. Such treatment can be carried on safely only under the constant supervision of a physician. Various substitutes for this treatment have been tried. The pneumatic cabinet or other contrivance to effect pneumatic differentiation (as the inhalation of a relatively compressed air and exhalation into a rarified one is technically called) can be employed with benefit. However such devices are rarely at hand.

When retraction of part of the chest-wall has been produced, if it is not of too long standing, help can be obtained by blowing exercises, such as playing a horn and by arm exercises which insure the fullest chest expansion as well as by climatic change and hill climbing. In the most chronic cases, some compensating emphysema and even hypertrophy of the lungs may be produced by such treatment and it will insure also greater endurance, less breathlessness and better general health. A gymnastic drill, which is useful in such cases, consists of the usual calisthenic movements of the arms, legs, and body, but each movement should be repeated from four to six times in quick succession with the lungs as fully expanded as possible and held so during the exercise. After four to six movements made thus, a rest of a few seconds should be taken, before the same or other movements are made. It has been suggested that by bending the body toward the unaffected side, the affected lung would be more perfectly expanded. It has seemed to me that no better results and usually not as good ones were obtained in this way as by using both sides simultaneously, and as far as possible symmetrically. In addition to the drill just mentioned, an exercise of value is to direct a patient to grasp rings or a bar above his head and to practice lifting his weight. This exercise will help to stretch a side which is deformed, and will be made more efficient if the patient is sufficiently expert to fill his lungs fully while thus suspended. However, to accomplish much in any of these cases of deformity, perseverance and a long time are required.

PATHOGENESIS OF ASCITES.

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CHICAGO.

Ascites is an accumulation of free fluid in the peritoneal cavity. It may be the result of an inflammatory process in the peritoneal cavity, or may be due to some local or general disturbance not accompanied by inflammation. I shall consider only the non-inflammatory variety, as the inflammatory type is the subject of another paper. The non-inflammatory variety may be considered under two great headings, i. e.: Ascites as a part of a general dropsy; ascites as a purely local dropsy, caused by some disease in the peritoneal cavity.

Ascites as a part of a general dropsy occurs in a great variety of conditions, but especially in cardio-vascular, renal and pulmonary diseases; in diseases of the blood and the various forms of cachexia. In these conditions it is a secondary factor of a general process, and it will be necessary to consider, briefly, the pathologic processes involved in its production. In a general way, all cases may be classed under four heads: 1, Ascites due to stagnation of the blood in the blood vessels; 2, ascites due to interference with the absorption of the lymph; 3, ascites due to a disturbance of the capillary secretion—alteration in the capillary walls; 4, ascites due to some alteration in the chemical composition of the blood and lymph—a disturbance of their molecular concentration.

One or more of these factors are at work in every case of ascites, and in some cases all four may be present. In chronic valvular heart diseases, with broken compensation, we have stagnation of the blood in the venous radicles and capillaries; a change in its chemical composition due to deficient oxygenation; and, as a result of this deficiency, changes occur in the capillary walls as well.

The cells lining the capillary walls must be considered as living organs, endowed with a capacity for work, i. e., a specific secretory function. Any disturbance of nutrition results in a disturbance of function, so that the secreting cells lose their specific selective action and the capillaries become inactive tubes, allowing filtration to take place indiscriminately. The crystalloids of the blood pass through into the lymph, resulting in a lymph rich in chlorids and sugar, but relatively poor in albumin molecules. This condition favors further abstraction of fluids from the blood, thus increasing transudation, until edema or dropsy results. If this process occurs beneath the skin, we call it anasarca; if in the pleural cavities, hydrothorax; if in the pericardial cavity, hydropericardium; if in the peritoneal cavity, we call it ascites. Reuss has shown that the lymph, the transudates in edema, in pleural and pericardial effusions, in cerebrospinal fluid and in ascites are all deficient in albumin molecules, but rich in crystalloids, as compared with the blood.

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REUSS' TABLE.

Pleural effusion (transudates).....	22.5 per M.
Pericardial effusion (transudates).....	18.3 per M.
Peritoneal effusion (ascites).....	11.1 per M.
Edema (subcutaneous)	5.8 per M.
Cerebrospinal fluid	1.4 per M.

Ketley and von Torday, Widál, Hamburger, Heidenhain and others have shown that there is an accumulation of chlorid molecules in the transudates and body tissues, greater than exists in the circulating blood. I was able to confirm these results, both by a chemical determination of the chlorids and by estimation of the freezing point. I found that ascitic fluid was always more concentrated than the blood of the same individual. When I say more concentrated, I mean that it contained more chlorid molecules, as shown by a reduction in the freezing point. In ten cases of ascites in organic heart disease, the freezing point was never above $-0.58^{\circ}\text{C}.$; and the average for ten cases was $-0.60^{\circ}\text{C}.$ The blood, taken from the veins of the forearm at the same time, froze at $-0.56^{\circ}\text{C}.$, which is normal. Here, again, we have two solutions separated by a thin membrane; one, the more concentrated ascitic fluid, in the free peritoneal cavity, the other, less concentrated, in the capillaries. The result is self-evident, namely, that, in an effort to establish an equilibrium, the more concentrated ascitic fluid will abstract more fluid from the capillaries, thus increasing transudation. The same is true of pleural and pericardial effusions, but to a lesser degree. Widál and his assistants have shown that the law of osmosis is quite an important factor in the production of subcutaneous edema. Heidenhain believes that the specific function of the capillary cells plays a controlling part in the formation of lymph, and whenever the removal of the lymph is interfered with and fails to keep pace with its production, edema results. He was able to increase the production of lymph remarkably, by subcutaneous injections of crab infusions, extract of leeches and mussels, or peptone solutions. In his experiments on dogs, he was able to increase the amount of lymph passing through the thoracic duct from six to fifteenfold. From these results he concludes that those substances are true lymphagogues and act by stimulating the secreting cells of the capillary walls. It is very probable that irritation of the vasomotor nerves also results in an increased vascular secretion, thus becoming a factor in the production of edema or ascites.

In renal diseases we have changes in the composition of the blood, brought about by a retention of waste products in the circulating blood, which act as vasomotor irritants, thus increasing vascular secretion. The direct action of these toxins on the cells of the capillaries causes a disturbance of function and allows filtration to take place. The changes in the cardiovascular system, associated with nephritis, cause increased blood pressure in the arterial system and favor transudation. The continued loss of albumin causes a state of hydremia, which favors the production of edema. If we add to all of these factors the effect of diminished excretion by the kidneys, the process becomes still more complicated.

In pulmonary diseases, as emphysema and fibrosis, we have deficient oxygenation of the blood, cyanosis, cardiovascular disturbances and subsequent changes in the capillary walls, rendering these more permeable to fluids.

In the blood diseases, as pernicious and secondary anemias, the leukemias, Hodgkin's disease, splenic anemia and Banti's disease, we have the chemical changes in the blood, the hydremia, the changes in the capillary walls, and, in addition, a toxic element to deal with. This also applies to the various forms of cachexias, such as that due to carcinoma, tuberculosis, syphilis and diabetes. Meltzner thinks that, in certain cases, we have a condition which he has termed "poto-cytosis," meaning an unusual capacity for fluids on the part of some of the tissue cells, thus favoring transudation.

Before considering the next variety of ascites it may be well to recapitulate and state briefly the factors entering into the production of edema or ascites. They are: 1, Venous stagnation; 2, increased permeability of the vessel walls; 3, hydremia or serous plethora; 4, increased secretion of the capillary cells; 5, changes in the composition of the blood; 6, interference with absorption of lymph; 7, vasomotor irritation by toxic substances increasing secretion of lymph and transudation; 8, high intravenous pressure as compared to relatively low arterial pressure; 9, retention of body fluids in nephritis; 10, potoeytosis (Meltzner)—cell thirst.

Ascites as a strictly localized dropsy, caused by some disease in the peritoneal cavity. Under this head would come the different forms of cirrhosis, the atrophic, hypertrophic, biliary or Hanot's and the mixed form of cirrhosis; syphilitic disease of the liver, as gumma, interstitial hepatitis and capsular cirrhosis; carcinoma, abscess, cysts and amyloid disease of the liver; malignant tumors of the stomach and pancreas; tumors of the gall bladder and peritoneum; retroperitoneal and mesenteric tumors; sarcoma, tuberculosis of the lymphatic glands and peritoneum; aneurism of aorta, peritoneal adhesions, hypernephroma, thrombosis of the portal vein or its branches; ovarian tumors, as cystic adenoma, carcinoma of the uterus and urinary bladder, etc.

As a factor in the production of ascites, cirrhosis of the liver is of considerable importance. Rolleston states that ascites occurs in 50 per cent. of all patients dying with cirrhotic livers. It occurs in a vast majority of the cases of cirrhosis, which run their full course; that is, in cases not dying from some intercurrent infection or hemorrhage. In Priece's 142 cases, ascites was present at autopsy 72 times. Kelynaek found it in 66 of 121 cases. The autopsy records at St. George's Hospital show that it was present in 84 of the 166 cases. In 80 cases, dying from the direct effects of cirrhosis, ascites occurred in 68 cases, or 85 per cent. It occurs with far greater frequency in the small than in the large cirrhotic livers. This is probably due to two factors: (1), because in the early stages of cirrhosis the liver is often larger than later in the disease. (2), because when cirrhosis becomes latent from compensatory hyperplasia of the liver cells the organ is considerably increased in size (Rolleston).

The factors which give rise to peritoneal effusion in cirrhosis require

some discussion. They are, I, mechanical factors: (a) obstruction to the passage of blood through the liver due to fibrosis and contraction around the intrahepatic branches of the portal veins; (b) thrombosis of the radicles of the portal vein in the liver; (c) thrombosis of the trunk of the portal vein. Obstruction to the passage of blood through the cirrhotic liver is an undoubted fact and leads to venous stasis in the portal vein area, as is shown by the collateral circulation and dilatation and thickening of the portal vein. That increased pressure in the portal vein alone does not always produce ascites has been shown by Hale White, who ligated the portal vein in dogs without producing ascites. Also, in patients with cirrhosis it is noticeable that when venous pressure is high, as shown by hematemesis and melena, ascites is frequently absent. Ascites is often present even though collateral circulation is well established, and, conversely, both ascites and all evidence of collateral circulation may be absent in cirrhosis. Levi reports such a case, in which, in addition, there was peritoneal tuberculosis, in itself a sufficient cause for ascites. For these reasons we may say that, although ascites is frequently present in cirrhosis, with obstruction to the passage of blood, this alone is not enough to produce ascites in all cases.

(b) Thrombosis of the radicles of the portal vein has been suggested as a factor in the production of ascites, but there is no positive proof for this assertion.

(c) Thrombosis of the trunk of the portal vein may and does produce ascites, but need not necessarily do so, and is an exceedingly rare condition, occurring only ten times in 334 cases of cirrhosis examined after death, or 3.3 per cent. of cases.

II. Toxemia plays a very important part in the production of ascites in cirrhosis. As a result of hepatic inadequacy, poisons absorbed from the alimentary tract and those produced in other parts of the body are not stopped and destroyed by the liver, but pass into the general circulation, and a condition of hepatic toxemia results analogous to that of renal toxemia. In both of these conditions, the patients become drowsy and frequently hemorrhages occur in different parts of the body. This hepatic toxin may have lymphagogue properties, thus becoming a more active agency in the production of transudates. The absence of ascites in biliary cirrhosis, where we have every evidence of toxemia, may be explained by the fact that in this type of cirrhosis there is less destruction of hepatic tissue than in the atrophic form, and, again, the toxins may be of a different nature. In biliary cirrhosis we have less interference with the passage of blood through the liver than in the portal type.

III. Ascites due to concomitant inflammation of the peritoneum is not an infrequent occurrence in cirrhosis, as we often find a perihepatitis, a low grade of inflammatory peritonitis, either the simple or the tubercular type. In these cases, we have an additional factor at work, because the hypertrophic inflammation of the peritoneum will interfere with the absorption of lymph, thus favoring the accumulation of free fluid in the peritoneal cavity.

IV. The influence of the cirrhotic processes on the cardio-vascular

system is a factor which can not be overlooked in the production of ascites. The backward pressure occurring in an ordinary case of heart incompetency would not be sufficient in itself to cause ascites, but, when associated with a cirrhotic liver it may readily do so. Heart disease may, then, produce ascites in patients suffering from cirrhosis in two ways, by backward pressure, as in tricuspid insufficiency, and by bringing about conditions, such as venous engorgement, stagnation of toxins, or damage to the endothelial cells of the peritoneum, which will precipitate ascites, due to the cirrhosis.

Summing up, we may again quote Rolleston, that ascites may be merely associated with cirrhosis and directly due to chronic or subacute peritonitis, perihepatitis or to cardiac failure. In rare cases it may be due to a direct complication of cirrhosis, as thrombosis of the portal vein or its radicles, or may be due to cirrhosis alone, as explained by the lymphagogue action of the hepatic toxins.

Syphilitic or capsular cirrhosis, gumma, carcinoma, echinococcus cysts, abscesses and amyloid disease would all act in a similar manner, with slight modifications in the pathologic processes. Tumors of the stomach, pancreas, mesentery and the peritoneum would act locally both by their pressure effects and as irritants. Malignant tumors would act also indirectly through their disturbance of the general metabolism, producing the hydremia of cachexia, intoxication and changes in the vessel walls. In these cases, especially in carcinoma of the peritoneum and tuberculous peritonitis, we have a peculiar type of ascites, namely, *chylous ascites*. This form is rare in cirrhosis, but we do sometimes have a so-called chylous fluid, which is very similar to it in appearance. Chylous ascites is found associated with carcinoma or tuberculosis of the peritoneum or mesentery; in infection with the *filaria sanguinis hominis*; compression of the thoracic duct by glands, scars or tumors; ulceration or traumatic injury to the lacteals in the mesentery; with thrombosis of the subclavian vein and with laceration of the thoracic duct.

Fatty or adipose ascites occurs in chronic and tuberculous peritonitis, in some cases of cirrhosis and is caused by the fatty degeneration of the endothelial cells and white blood corpuscles, which are in excess in the ascitic fluid.

Jousset has described a form of ascites which he calls the *opalescent*, because the fluid is not chylous or fatty, but is opalescent because lecithin and nucleo-albumins are present. *Hemorrhagic* ascites is sometimes found in cirrhosis, but more frequently in malignant diseases and blood conditions. There is still another form of ascites which is not well understood, namely, *fetal ascites*. Cases of this kind have been reported by Eden, Ballantyne, Spencer and Maline. The conditions found at autopsy were as follows: One case of portal obstruction, two cases of congenital syphilis, two cases of tuberculosis of the peritoneum and one case of hypernephroma of left kidney. I was able to find two cases in our autopsy records. In one case it was due to congenital syphilis; in the other, no cause could be found, except that the mother had died from eclampsia.

There were no pathologic changes in any of the fetal organs to account for the ascites.

With a view of determining the frequency of ascites and ascertaining, if possible, the factors at work in its production, I studied carefully the autopsy records of 3,000 cases at Rush Medical College and the Cook County Hospital, being careful not to count duplicates where such existed. Out of this large number I was able to collect 362 cases of ascites, which shows that it occurred in 8.3 per cent. of all cases coming to autopsy, or, in other words, in one out of every twelve bodies examined. In collecting these cases I took only those in which there was enough fluid present to warrant an anatomic diagnosis of ascites. An analysis of these cases shows that the ascites was a part of a general dropsy in 177 cases, or 49 per cent. of the whole. It was associated with cirrhosis of the liver in 77 cases, but cirrhosis of the liver alone was present in only 16. In other words, diseases of the heart and kidneys were associated conditions in 61 of the 77 cases of cirrhosis. Ascites was associated with disease of the heart alone in 27 cases; with some disease of the kidney alone, in only 14 cases; with diseases of the heart and liver in 21 cases; with diseases of the heart and kidney in 70 cases; with diseases of the kidney and liver in 33 cases; with diseases of the heart, kidney and liver in 38 cases. Ascites associated with some disease in the peritoneal cavity occurred under the following conditions: with carcinoma of the liver, stomach, pancreas, gall bladder, peritoneum or intestines, 49 cases; sarcoma occurred in only 8 cases; syphilitic gumma of liver in 18 cases; aneurism of abdominal aorta in 2 cases; tuberculosis of the peritoneum in 25 cases; chronic peritonitis, not tuberculous, in 4 cases; perihepatitis and capsular cirrhosis, 8 cases; endothelioma of peritoneum, 1 case; hypernephroma, 4 cases. Ascites was associated with, or occurred in constitutional and blood diseases as follows: in pernicious anemia ten times; splenic anemia two times; Banti's disease two times; Hodgkin's disease four times; splenomedullary leukemia four times; lymphatic leukemia three times; diabetes mellitus once; congenital syphilis four times; cachexia due to carcinoma, tuberculosis or malaria, twelve times; as a part of a general polyserositis, twice. In fetuses, ascites occurred in 2 cases, one congenital syphilis and one in a case of eclampsia in the mother.

A brief summary of the character of the ascitic fluid may not be out of place. In 277 cases the fluid was clear, usually of a light straw or yellow color, but sometimes more of a greenish hue. In many of these cases it was distinctly bile stained. In 72 cases the fluid was bloody. In four cases it was chylous or fatty. The fluid was bloody in carcinoma 33 times; in tuberculous peritonitis, 14 times; in organic heart disease and cirrhosis, 14 times, and once, each, in sarcoma, leukemia, splenomegaly and aneurism of aorta; twice in hypernephroma and syphilitic cirrhosis. Chylous fluid was found twice, associated with carcinoma, and twice in chronic ulcerative tuberculosis of the intestines.

From a study of these cases and what has been said above, it is very evident that the pathogenesis of ascites is not so simple as it would seem on first thought, but that many factors are involved in its production.

all of which must be thoroughly understood by the physician before a case can be treated successfully. This also shows the necessity of applying our physiologic and pathologic knowledge in the treatment of all diseases, and, most important, the necessity of a thorough and comprehensive examination of every case.

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SYMPTOMS AND PHYSICAL SIGNS OF PERITONITIS.

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CHICAGO.

Nothnagel describes two general groups of symptoms of peritonitis: (a) those which are the immediate result of inflammation and which may be called the "cardinal" symptoms, and (b) those which occur in infection, and which may be called the general symptoms. This is about as logical a classification as can be devised. Of the cardinal symptoms, pain, exudation, meteorism and abdominal rigidity are paramount; vomiting and hiccough, painful micturition and the general appearance of the patient being of second importance. Of the symptoms of infection, the blood changes, temperature and pulse demand consideration. The physical signs will be discussed with the symptomatology.

(A) Symptoms and signs which are the immediate result of inflammation of the peritoneum, the first four being of major and the last three of minor importance.

(1) Pain.—As a symptom this is of remarkable constancy. In acute cases it is always present, except in a few rare cases due to perforation, in whom death takes place before the peritoneum has had time to become inflamed. In chronic cases pain is present, if not spontaneously, at least upon pressure. No case is without it, even cases of tubercular peritonitis with an apparently latent course showing it, if carefully palpated. The severity of the pain varies in acute and chronic cases, acute peritonitis being one of the most painful of diseases because of the large amount of peritoneal surface involved. In most of the chronic cases the resulting adhesions, which greatly limit the surface inflamed, also greatly reduce the pain. The rapidity of onset in acute cases has a slight diagnostic value, those beginning very suddenly and violently being frequently caused by perforation from the alimentary canal or bladder, or from rupture of the spleen, as may happen in typhoid fever or malaria with very slight trauma. If the onset is more gradual, yet rather rapid, the peritonitis is due to some infection rather than to perforation.

The location of the pain is not in the skin, but in the peritoneum, as is shown by the fact that a fold of abdominal skin very carefully picked up by the fingers without disturbing the underlying peritoneum causes no pain, whereas very slight pressure downward upon the abdomi-

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nal wall causes pain. In acute cases the abdomen is uniformly tender, but now and then a point may be found of greatest intensity, and this is apt to mark the site of invasion of the peritoneum. Often the pain is not confined to the abdomen, but radiates to the chest or shoulders. It will be remembered that the six lower intercostal nerves supply the anterior abdominal wall as well as the six lower intercostal spaces. Thus it happens that sensory impulses from the abdominal filaments may be interpreted by the sensorium as coming from the intercostal territory. Thus the pain is wrongly referred to the chest by the patient. Similarly the phrenic nerve, which is not wholly a motor nerve, contains numerous sensory filaments to the under surface of the diaphragm and to the uppermost sympathetic plexuses. Sensory impulses of pain from the upper portion of the abdominal cavity pressing upward through the phrenic nerve are thus wrongly referred to neck or shoulder by the patient or, indeed, to the anterior mediastinum. It is safe to say that pains referred to neck, chest or shoulder, therefore, indicate peritonitis, involving the upper part of the abdominal cavity, when peritonitis exists.

Very characteristic of peritoneal pain, whether in acute or chronic cases, is its exacerbation upon pressure. Abdominal pain which is eased by pressure is not localized in the peritoneum. Hence it is that in peritonitis the patient dislikes the pressure of bed clothes, and even the touch of the physician's hand. Spontaneous exacerbations of pain are due, as a rule, to peristalsis.

The effects of the pain upon the patient are numerous. In the acute and painful cases the patient lies with legs flexed on thighs and thighs partly flexed upon the abdomen so that the walls of the latter may be relieved and the underlying peritoneum escape pressure. The position of the trunk is such as to protect the abdomen. The patient can not move his legs without causing increased pain, but the pain that he has causes extreme restlessness and the arms and head are moved. Breathing becomes wholly costal to prevent movement of the diaphragm and is necessarily shallow. Thus cyanosis follows. Shallow breathing is rapid breathing, and hence the pulse rate is quickened. Coughing, sneezing, defecation and even talking are all suppressed so that the pain may be lessened.

(2) Exudation.—The exudate may be fluid or solid, free or encapsulated, much or little. The varieties are many: serous, fibrinous, purulent, hemorrhagic, sero-fibrinous, sero-purulent, chyliform. The exudate may even be gaseous when peritonitis follows perforation. A fairly large amount of fluid exudate must be present if it is to be recognized clinically, 200 c.c. in the case of a child, 1,000 c.c. in the case of an adult. Smaller amounts gravitate to the pelvis and escape detection, and on account of the pain from percussion a thorough examination is hard to make. The kind of the exudate can be determined only by making a test puncture. Its presence can be determined by two sets of signs, (1) the direct and (2) the indirect or secondary.

The direct signs of an exudate are the same as those for ascites and are based upon inspection, palpation showing fluctuation, and percussion. If the exudate is free in the abdominal cavity inspection will show a uni-

form distension in both flanks; if encapsulated, it will exhibit an asymmetry. For purposes of inspection it is best to have the patient in dorsal decubitus with the light admitted through one window in a slanting direction so that the shadows cast by any abdominal inequalities may show. This is a very valuable and much neglected method of physical examination. Fluctuation is not obtainable except when there is a large amount of exudate. Percussion is exceedingly valuable. If the patient is in the dorsal decubitus, an elliptical area of tympany should be present in the region of the navel. When the patient turns upon either flank this area of tympany should migrate to the opposite flank. A dullness which does not change position with change in the position of the patient is apt to indicate an encapsulated fluid. Auscultation is of slight value, except in rare instances of fibrinous peritonitis, where an exudate over liver or spleen gives rise to a friction rub which may be heard with the stethoscope upon inspiration, the rub being due to the fact that these organs are pressed down by the diaphragm in inspiration. At this point it may be added that collections of fluid within the intestines may be confused with exudates in the abdominal cavity. If splashing can be detected, air and gas are in contact, and, there being no signs of perforation, the fluid is within the bowel. Moreover, if there be no dullness over the symphysis pubis, the fluid is either within the intestines or else it is encapsulated within the abdominal cavity. If dullness in the two flanks be not symmetrical, a free exudate is not present.

The indirect or secondary effects of the exudate are exerted chiefly upon the diaphragm, heart, and circulation within the abdomen. The diaphragm is pushed high, well up to the fourth rib, thus compressing the lung and elevating the apex beat. The latter is not infrequently found in the fourth interspace. Since the diaphragm lies so high, its movements are much embarrassed and respiration suffers. Edema of the legs often appears because the exudate within the abdominal cavity ultimately reaches a tension great enough to compress the vena cava inferior sufficiently to interfere with the return of venous blood from the lower extremities. Hence the edema. The scanty urine is also explained by the great pressure of an ascitic exudate upon the renal veins. Such back pressure prevents proper excretion of urine.

(3) Meteorism.—The older authors used the word meteorism when gas accumulated acutely in the bowels, reserving the word tympanites for chronic cases; and it would be well for us to maintain this distinction. Meteorism and tympanites are intimately associated with intestinal paralysis, just as is the marked constipation of acute peritonitis. Yet not all cases show meteorism. It has been suggested that the paralysis of peristalsis is due to a nervous cause, as some alteration in the functions of the sympathetic nerve plexuses in the intestinal wall. Others account for the paralysis by edema of the intestinal wall. Ordinarily the more the gas the more the peristalsis, but it is not so in peritonitis. Complicating the explanation that meteorism is caused by paralysis of peristalsis is the fact that diarrhea occurred in many acute cases of puerperal peritonitis, and yet there is great meteorism.

As has been said, meteorism is not always present in the acute cases, and tympanites is very often lacking in the chronic ones. Though the symptom is a cardinal one, it yields in constancy to the pain and exudate. It varies exceedingly in amount, from an enormous distension to almost no distension at all, especially in chronic and encapsulated cases. If the patient's abdominal walls are flaccid the distension is naturally greater. Hence in puerperal cases meteorism may reach great proportions. The onset of meteorism is usually early, as a rule gradual, rarely suddenly. In perforation cases it comes especially early.

The effects produced by meteorism merely emphasize those produced by the exudate. The skin is smooth, shiny, tense and cyanotic all over the distended abdomen. The abdomen is apt to show more distension in the middle and upper parts in meteorism, with moderate bulging of the flanks; whereas a large exudate causes marked bulging in the flanks and less in the median and upper portions. The diaphragm is pushed high up, the apex of the heart often being displaced into the fourth interspace. The stiffer the walls the higher the displacement. Naturally respiration is greatly embarrassed, is shallow and rapid, and the skin is cyanotic in consequence.

The diagnosis of meteorism is, therefore, very easy. Inspection discloses its presence by the form of the abdomen. Palpation shows no fluctuation, thus differentiating exudation. Above all, percussion demonstrates the characteristic tympany. Auscultation may help; it is affirmed that if no gurgling be heard in the abdominal cavity for a period of five full minutes when the stethoscope is used intestinal peristalsis is present. Very important is the differentiation of meteorism, or gas in the bowels, from air or gas in the abdominal cavity following perforation. The old rule is the best we have: obliteration of liver and splenic dulness points to free gas from a perforation. I am aware that the intense meteorism of some cases greatly reduces liver dulness in the right nipple line, but it never completely eliminates it in the anterior or midaxillary line. If liver dulness is absent at these points it is safe to say that perforation has taken place.

(4) Abdominal rigidity is not present at all in many cases of chronic, circumscribed or adhesive forms of peritonitis; it is, on the other hand, habitually present in the acute cases and in not a few of the chronic forms. The rigidity is due to a reflex muscular spasm of the abdominal wall, and is probably caused by the sudden and violent irritation of the sensory nerves in the parietal layer of the peritoneum. Its purpose is clearly protective. Its onset is early, and, according to some authorities, it even antedates pain. As a rule, it does not persist, but has a tendency to disappear with the onset of intestinal paralysis. The effect of the abdominal rigidity is characteristic, since it precedes the exudate. The abdomen is flattened or even insunken, the edges of the ribs and the crests of the ilia being prominent. The wall feels hard and like a board. These signs are most marked in acute and perforative cases. In acute local peritonitis or focal peritonitis as appendicitis the rigidity is often

localized, one-half of the anterior abdominal wall being rigid and the other partially relaxed.

The symptoms and signs thus far mentioned, pain, exudation, meteorism and abdominal rigidity, are properly cardinal signs. The following three signs and symptoms, while very important, perhaps deserve secondary consideration. These are the general appearance of the patient, the vomiting and hiccough, and the scanty micturition.

(1) General Appearance of the Patient.—In the chronic cases there is nothing characteristic in the facial appearance. In the subacute cases emaciation and cachexia are common because of the anorexia. In acute cases there are many characteristic features. The tongue is dry and darkly coated; the breath is foul and cadaverous; the body is so disposed as to save all possible contraction of the abdominal muscles. Only the arms and head are moved restlessly about. The patient does not speak; coughing, sneezing and even breathing is suppressed. The facial expression is the so-called *facies Hippocratica*. The nose is pointed, every drop of fluid being taken from the lymph spaces and vessels, the eyes are sunken, the facial expression is anxious, the temples are hollow, the color of the face is lead-like or gray. Death looks from every feature. The extremities are cold and cyanotic. The vasomotor paralysis is complete. There is a cold perspiration on the forehead, about the upper lip, in the palms of the hand, along the calves, on the feet. The sensorium is markedly depressed, though the intellect may be preserved. If delirium is present it is of the low, muttering, bed-picking, typhoidal type. This is apt to be followed by loss of consciousness, stupor, coma and death from intense sepsis. If psychoses are present they are of the type of the infectious psychoses, depressive states predominating.

(2) Vomiting and Hiccough.—Vomiting is doubtless reflex, being due to irritation of sensory nerve filaments in the peritoneum. Hiccough is due to spasmodic contraction of the diaphragm caused by irritation of the sensory peritoneal filaments of the phrenic nerve with response in the motor supply. Hiccough is more common in acute than in chronic peritonitis because in the latter the area of peritoneum involved is in the pelvis or lower portion of the abdominal cavity. Sometimes the vomiting or the hiccough is excessively burdensome because of its frequency and because it persists a number of days. Vomiting is present in almost all cases with rapid onset, less frequently in cases with slow onset. In chronic cases vomiting and hiccough are unusual. Very important is the fact that vomiting almost invariably marks perforation.

(3) Micturition is painful and frequent and small in amount. This is because the peritoneum over the bladder is involved in general cases, and there is traction upon it as the bladder is emptied. Similarly the bladder does not fill because of the pain caused by even a partial stretching of the vesical peritoneum. The quantity is reduced both because of the fever and the small amount of fluid taken; and the specific gravity is high. Both nucleo-albumin and serum-albumin are present. Of the abnormal constituents, indican is the most notable. Normally present in very slight amounts, in peritonitis it is enormously increased, being ex-

ceeded only in cases of acute intestinal obstruction. Indicanuria in acute peritonitis is of marked diagnostic value; in chronic peritonitis, it has no diagnostic value whatever. According to Nothnagel, indican is a potassic indoxyl sulphate, derived from indol, which is a product of putrefaction of albumin, due to putrefacient bacteria.

(B) Symptoms and signs which are due to infection in general and, therefore, occur in infectious peritonitis.

(1) Blood Changes.—As a rule, the blood should be examined in a twofold way. The leucocyte count should be made and a blood culture started. Usually a leucocytosis is found, the average count being 15,000 to 50,000 white blood corpuscles per cubic millimeter. It is to be noted that the increase is almost wholly in the polymorphonuclear corpuscles, which rise from the normal, 69 to 70 per cent., to 80 to 85 to 90 per cent. There is no prognostic indication in the number of leucocytes found, but a leucopenia or a normal count are frequently found in the gravest cases. In these it seems as though the organism were too much overwhelmed by bacterial toxins to be able to react at all.

A blood culture frequently shows a bacteremia. Hence endocarditis may complicate the case, though as a matter of fact it very rarely develops. Similarly pericarditis seldom occurs. Pleurisy is an occasional complication, infection being not so often by the blood as by the lymph channels of von Recklinghausen.

Temperature.—There is nothing typical about the fever. In chronic and circumscribed cases the temperature is low and usually little regarded by the patient. In acute cases the fever is high, as a rule, of sudden onset, often preceded by a chill. It is a continuous fever, reaching 104° frequently, but it may be very irregular with huge oscillations, especially when the case is approaching a fatal termination. Possibly there are three sorts of temperature worthy of special mention, (a) the temperature of perforation, (b) the temperature of sepsis, and (c) the temperature of tuberculosis.

(a) The temperature of perforation is a collapse temperature. If the temperature has been high, as in typhoid fever for example, when perforation takes place, it falls abruptly to the normal or below, while the pulse rapidly increases in rate, and the patient often vomits. The temperature usually remains low till death. (b) In sepsis the temperature shows great oscillations. It is usually accompanied by chills and a marked leucocytosis, and in such cases a localized collection of pus is to be suspected. (c) In tubercular peritonitis the temperature is low and insidious in early stages, reaching a maximum between 1 and 4 o'clock in the afternoon, frequently being normal a greater part of the night and forenoon. When diarrhea begins to appear the temperature rises and a continuous fever follows with no great remissions.

There are two facts associated with the temperature of great moment. The first is that such cases as show a difference of 2° to 4° between rectal and axillary or rectal and oral temperature are in a very bad way. In these cases the skin is cool, but internally the temperature is very high. The importance of taking the temperature by rectum in cases of

peritonitis is obvious. The second fact is that there is no relation whatever between the degree of temperature and the character of the exudate. The abdomen may be full of pus and the temperature only 100. Indeed, one might almost declare that the temperature varies inversely with the severity of the case.

(3) Pulse.—In chronic forms there is nothing characteristic about the pulse. In acute forms it is so characteristic as to have received the name of *pulsus abdominalis* from the older authors. The rate is from 120 to 140, occasionally rising to 160 or 170. The tension is low, the pulse is small, thin and thready. It is not irregular, as a rule, but may be intermittent. In septic general peritonitis is to be found the highest pulse rate with the lowest tension in any infectious disease. Such a pulse is due to bacterial toxins absorbed in huge quantities by the vast surface of peritoneum inflamed. These toxins simply overwhelm the vasomotor and circulatory centers in the central nervous system. Thus the prognostic value of the pulse is very great, since it is to some extent an indication of the intensity of the toxemia. It must be declared, however, that there is no relation between pulse and temperature. Though they may go together in many diseases, in peritonitis each follows its own bent. The temperature may be slight or even subnormal and the pulse 160 or 170. Indeed, the higher the pulse rate and the lower the temperature the worse the prognosis. Moreover, there is no relation between the pulse rate and the character of the exudate. A purulent peritonitis may be associated with a pulse of only 100 or 110.

By way of summary, it may be said that the symptoms and signs of peritonitis fall into two groups: those depending upon peritoneal involvement and those due to infection in general. Of the former, pain, exudate, meteorism and abdominal rigidity are cardinal signs, the *facies Hippocratica*, vomiting and hiccough and meteorism being of almost equal importance. Of the symptoms due to infection in general, the blood changes, pulse and temperature are the most important. A leucopenia often denotes a grave case. Differences between rectal and axillary temperatures of 2° or over are ominous. The temperature is not influenced by the character of the exudate, and neither is the pulse. There is no relation between the amount of temperature and the pulse rate.

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THE DIFFERENTIAL DIAGNOSIS OF PERITONITIS AND OF ITS VARIOUS FORMS.*

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Peritonitis may arise in three ways: first, by direct extension from an infected focus, as from the gastrointestinal tract, from an infection of the gall bladder, etc.; second, by infection through the blood, as in pneumonia, sepsis, etc.; third, through the lymphatics, as from genital infec-

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tions, enteritis without perforation, etc. The chief bacterial causes are the colon bacillus, the pyogenic cocci, pneumococcus, tubercle bacillus and the gonococcus. The exudate may be fibrinous, serofibrinous, purulent, hemorrhagic, etc., or there may be only adhesions.

To consider first the diagnosis of acute general peritonitis, we find that it is based on certain symptoms and signs which may be briefly described in three groups: 1. Those due to the peritoneal inflammation itself. 2. Those due to functional or anatomic changes in the organs affected by the process. 3. The general symptoms.

Of the first group, the first is pain. This may come on suddenly if the peritonitis is due to perforation of the intestinal tract or of an abscess, or may come on gradually. As a rule, it is persistent, usually severe, increased by motion, and is located about the umbilicus. It may be absent where the patient is benumbed, as in typhoid perforation. It is usually associated with tenderness and rigidity. Another group of symptoms, due to the peritoneal involvement directly, is that due to an exudate in the peritoneal cavity. These vary with the amount and character of the exudate. There may be, for example, all the signs of free fluid; dulness in the flanks, shifting with position, fluctuation, etc.; but, as a rule, the fluid is less freely movable than in serous ascites and it may be so small in amount as to escape detection by ordinary methods. In this case it has been suggested to inject 500 c.c. of salt solution and remove it in hopes of finding signs of inflammation. Paracentesis gives the best means of diagnosis of a peritoneal exudate. Care must be taken that an adherent intestine is not punctured. The fluid removed will be turbid, of a higher specific gravity and show a higher albumin content than a transudate.

Of the symptoms, the effect of peritonitis on the abdominal organs, we may note: 1. Vomiting. This is fairly constant and persistent. The vomitus is frequently bile stained, but not, as a rule, feculent. It is reflex in origin. 2. Hiccough is frequent, even without diaphragmatic involvement. It is reflex in origin. 3. Constipation is the rule, although diarrhea occurs at times. The degree varies up to complete obstipation by paralytic ileus. 4. Meteorism is usually present. While due to intestinal paresis, it is, in a way, the cause of the latter or, at any rate, favors its increase by distention of the muscle coats of the intestine. It is often extreme. Paresis of the intestine may be diagnosed where intestinal gurgling can not be made out by the stethoscope. 5. Disturbances of the bladder, such as frequent and painful urination. 6. Indicanuria. This is the result of intestinal putrefaction and, according to Nothnagel, is of great diagnostic value.

The general symptoms of peritonitis are those due to inflammation and those due to collapse. The febrile reaction varies, but, as a rule, a moderate rise of temperature occurs and leucocytosis is usually found. Certain cases show, however, no rise of temperature and leucopenia. The collapse symptoms are rapid, thready pulse, drawn expression with hollow eyes—the so-called facies Hippocratica—cold hands and feet. As a rule, the pulse is a better guide to the patient's condition than the temperature.

The diagnosis of local peritonitis will depend on symptoms and physical signs that, on the whole, are much the same as in general peritonitis, but the clinical picture will vary considerably with the portion of the peritoneal cavity involved. In subphrenic abscess, for example, gastric symptoms and evidence of diaphragmatic irritation will be marked while in pelvic processes bladder irritation will be more frequent and the intestinal symptoms will be in abeyance. The local physical signs will be more in evidence and the history of some local process will be of importance in the diagnosis.

The diagnosis of acute general peritonitis, where the clinical picture is well developed, will, as a rule, be easy, but certain conditions will have to be excluded where the clinical picture is obscure. Intestinal obstruction, for example, may give rise to confusion by reason of its symptoms, especially nausea and vomiting, abdominal pain, obstipation and collapse. A rise of temperature may or may not occur. When it is remembered that peritonitis often develops as a result of the obstruction, the differentiation is seen to be even more difficult. The vomiting in obstruction, however, is more often feculent and the obstipation comes on earlier and is more extreme. The local findings will vary with the location of the obstruction. The intestinal distention may be local in case of obstruction high up, and a tumor mass may be present, especially in intussusception. Here, also, the age, the occurrence of bloody stools and tenesmus will assist in clearing up the diagnosis. Osler speaks of cases of peritonitis following appendicitis being diagnosed as intestinal obstruction. The frequency of the former condition should make this mistake rare.

Another condition that may give rise to difficulty in the differential diagnosis is acute hemorrhagic pancreatitis. The sudden onset with pain, nausea and vomiting, and fever with local signs in the epigastric region, usually lead to a diagnosis of intestinal obstruction or peritonitis, and, as a rule, it may be said that before operation the diagnosis can not be made. The condition has been suspected in several cases, however.

A third condition that may have to be differentiated is simple enteritis or enterocolitis. This may show colicky pain with vomiting, fever and collapse, but diarrhea is more frequent and the course will usually clear up the diagnosis. It must be borne in mind that this condition may give rise to peritonitis by extension through the lymphatics of the unbroken intestinal wall. In a case of peritonitis under the writer's care at the Cook County Hospital, a diagnosis of typhoid fever with perforation was made. Operation showed no atrium and, in the subsequent course, typhoid was excluded. It was a non-specific enteritis with secondary peritonitis.

Ruptured tubal pregnancy may give rise to difficulty, but the history, the physical signs on pelvic examination and the early developing acute anemia should clear up the diagnosis. Rupture of an abdominal aneurism, embolism of the superior mesenteric artery and thrombosis of the corresponding vein have led to doubt in a few cases. Each would show pain and an early collapse with abdominal tenderness, etc., and, in the last two, peritonitis may develop. A study of the cardio-vascular system should lead to the proper diagnosis. A serous diarrhea is a constant symp-

tom in thrombosis of the mesenteric vein. Hysterical peritonitis has been described, and Osler says it has "deceived the very elect." This would seem to be a case where to err on the safe side would be the part of wisdom, and these cases should be called peritonitis until proved something else.

Acute dilatation of the stomach, especially when postoperative, has led to confusion. Halstead¹ has recently reported such a case. The diagnosis would rest here on the stomach examination. Twisted pedicle of an ovarian cyst and torsion of an omental tumor have to be remembered as possible confusing conditions. Finally, it must not be forgotten that thoracic lesions may simulate peritonitis. Pneumonia, for example, may show pain in the abdomen and give rise to confusion. These conditions should, however, be cleared up by the thoracic examination.

Local peritonitis will, at times, be difficult of diagnosis. A subphrenic abscess, for example, may be confused with certain thoracic conditions as pleurisy or, more often, empyema and pyopneumothorax. The signs may be much the same, but the history of a thoracic condition on the one hand and of an abdominal condition, especially appendicitis, or ulcer of the stomach on the other, points the way to a proper solution. I have found that the preponderance of abdominal over thoracic involvement of especial value in this differentiation. An empyema may push the liver down, for example, but only when it is extensive and reaches high up, while a subphrenic process may extend upward, but only when its downward extension is marked. The findings on exploratory puncture will often be of value. Where pus is obtained by aspiration in one intercostal space and a serous fluid from the space next higher to it, subphrenic abscess must be thought of, though the same findings have been observed in pleurisy with localized empyema. Fürbringer noted that where the needle perforated the diaphragm it showed excursions more marked and in the opposite direction to those obtained from puncture of the pleural sac. Pfuhl has shown that the manometer may be of value in this differentiation. When the pus lies below the diaphragm the pressure is greater on inspiration, while the opposite holds in empyema. The x-ray may be of value in locating the position of the diaphragm. In this same condition, liver abscess may be thought of. Absence of jaundice and of tenderness of the liver would speak against abscess of that organ. It must be remembered that subphrenic abscess may follow liver abscess.

Local peritoneal inflammations in the pelvis will have to be differentiated from non-inflammatory lesions in that region, especially tumors. The history will be of value here, and a careful local examination will, as a rule, clear up the diagnosis. I have been astonished to find cases of pelvic inflammation with almost a total absence of pain and tenderness. This must be remembered if mistakes are to be avoided.

The diagnosis of the cause of peritonitis will often be easy, but may be of considerable difficulty. Where, for example, a diagnosis of appendicitis has been made and a sudden sharp pain in the right iliac fossa occurs followed by a subsidence of the local signs and the development of general

1. Halstead: *Journal of Surgery, Gynecology and Obstetrics*.

pain, tenderness and rigidity with signs of free fluid in the abdomen and where the general symptoms of collapse develop, the diagnosis of perforation with general peritonitis can be made with reasonable assurance. Where, again, a puerperal infection is followed by the symptoms of general peritonitis the diagnosis will be easy. In those cases, on the other hand, where the patient comes under observation with a well-developed general peritonitis, the diagnosis of the underlying cause may be of great difficulty. Here the history of attacks of biliary colic or of indefinite symptoms due perhaps to cholecystitis, cholangitis, etc., may justify a diagnosis of ruptured gall bladder. Or perhaps the history may bring out the occurrence of pains in the epigastrium which were dependent on the taking of food, or it may be hematemesis has occurred when a probable diagnosis of ulcer of the stomach can be made. Some cases will be obscure, however, till an operation has been performed and a few may remain obscure till cleared up by autopsy. I remember a case of cryptogenetic sepsis with peritonitis where the atrium remained a puzzle till the autopsy showed a pyonephrosis as the starting point. The urine examination should have cleared this case up, but by some mistake a negative result was recorded. In an obscure case of localized peritonitis in the lesser sac the examination of the stomach contents showed a carcinoma of the stomach to be present, and the autopsy showed an ulcerative cancer which had ruptured into the lesser sac. It has happened to a prominent surgeon that an exploratory incision in the lower abdomen had to be enlarged upward till the origin of the trouble was found in a perforated ulcer of the stomach.

Before leaving the consideration of non-specific peritonitis, a brief discussion of the diagnosis of typhoid perforation will be in order. The difficulties of this diagnosis are manifold. On the one hand, a case may show at autopsy marked extravasation of intestinal fluids where no sign of peritonitis was present during life, or, on the other hand, a well-developed sharp pain followed by tenderness, rigidity, etc., led to a diagnosis of perforation, but an operation disclosed only a few flakes of fibrin and no perforation. In a case recently under observation at Wesley Hospital, a sudden severe pain in the right side followed by vomiting led to a suspicion of perforation. The abdomen was distended markedly, the liver dulness decreased, but not absent. The pulse was increased materially. Leucocyte counts showed no increase, however, two counts a few hours apart being about 8,000 each. The patient was watched carefully, but he improved markedly after a few hours and recovered uneventfully. The diagnosis must remain in doubt. There was no hemorrhage—the bowels were moving freely. Perhaps the meteorism gave rise to increased peristalsis and caused the pain, or it is possible that here as above we had to do with a localized plastic peritonitis by extension. Pain usually accompanied by rigidity and tenderness was the most frequent symptom in seven cases of perforation occurring among 500 typhoid cases at the Cook County Hospital in 1902 which were studied by Dr. F. G. Harris, of Chicago, and myself. It was present in five cases, as was also vomiting. Obliteration of the liver dulness occurred in three cases, and free fluid in

the abdomen was noted in two cases. Hiiccough was also noted twice. At one time much was looked for from the leucocyte count, but the findings are so inconstant as to be of no value. A positive and marked increase may, however, help. It must be borne in mind that general peritonitis in typhoid may be due to other causes than perforation. These are extension from the intestine without perforation, ruptured spleen and ruptured abscess of a mesenteric gland. For practical purposes these may be disregarded in diagnosis because they are far rarer than perforation. The question of the diagnosis of typhoid perforation may be summarized thus: The diagnosis must be made on the symptom-complex, since no one symptom is pathognomonic. Where a sudden sharp pain, usually in the right iliac region, is followed by vomiting, marked abdominal distention with loss of liver dulness, and where the pulse rate is increased and symptoms of collapse come on, peritonitis due to perforation is to be suspected. If in addition the leucocytes show a marked increase within a few hours the diagnosis may be even more positively made. As a general rule for therapeutic purposes it is better to err on the side of the positive diagnosis than to fail to recognize the condition when present.

A word may be said here regarding the diagnosis of chronic forms of peritonitis. An exudative and an adhesive form have been described. The symptoms are, as a rule, not marked. There may be pain and tenderness and sometimes fever has been noted. The diagnosis is often made first at autopsy, particularly of the adhesive form. The differential diagnosis from tubercular and cancerous processes, on the one hand, and from cirrhosis of the liver and other forms of portal obstruction, on the other, is often impossible.

Of the specific forms of peritonitis the tuberculous variety is the most frequent. Anatomically we note a general miliary form with slight evidences of peritonitis—tuberculosis of the peritoneum—and a similar form with marked peritonitis—tuberculous peritonitis. Often the process is limited to a few miliary nodules about an intestinal ulcer, and between these extremes we have every variety. Frequently there are larger tubercles and enclosed pockets that are often filled with a purulent or caseous material while the omentum is usually thickened and contracted or rolled up as a hard mass crossing the abdomen about the level of the navel. At times the process gives rise only to adhesions between the intestines with no exudate. There are, as a rule, other tuberculous foci found at autopsy. These are especially tuberculous bronchial glands and tuberculosis of the other serous membranes.

The symptoms and physical signs of tuberculous peritonitis vary. Pain and tenderness are usually present. Vomiting occurs at times and diarrhea is very frequently found. It is often due to intestinal ulcers and then is severe and persistent. Meteorism varies with the type of the process. Signs of free fluid may be obtained, but, as a rule, the fluid is more or less circumscribed into pockets by adhesions. Tumor masses may be felt frequently. Most often it is the thickened omentum that is felt, but larger and smaller tumors may be felt anywhere in the abdomen. The signs of a chronic intestinal obstruction may be present. The general

symptoms vary. As a rule, there is at least a slight afternoon rise of temperature. The pulse rate is rapid, often out of proportion to the temperature. Ehrlich's diazo reaction is often present in the urine. There are often signs of tuberculosis elsewhere, particularly in the apices. Paracentesis abdominis may give valuable data. The fluid is at times hemorrhagic. The tubercle bacilli may be found, but oftener a positive result will only be obtained by inoculating guinea-pigs. Considerable interest has been aroused in the cytology of the fluid, and a lymphocytosis has been considered as of value in the diagnosis of tubercular peritonitis. Finally, tuberculin injections must be mentioned as valuable when sharply positive. I have, however, seen two cases where a chronic process became suddenly acute after the use of tuberculin. Both terminated fatally in the course of a few weeks.

The differential diagnosis has to consider certain groups of cases. In the group where a generalized exudate occurs other causes of ascites must be considered, especially cirrhosis of the liver. When the frequent association of these two diseases is remembered, the diagnosis, however, becomes easier or harder, as the case may be. In a case recently under observation at Wesley Hospital, tuberculous peritonitis was suspected in view of the presence of cirrhosis of the liver and lymphocytosis in the ascitic fluid. The abdomen, too, was not uniformly soft after tapping, but ill-defined areas of resistance were to be made out. The autopsy showed no tuberculous peritonitis, however. Those cases of ascites due to heart and kidney lesions will, as a rule, be ruled out easily. The cases of chronic non-specific exudative peritonitis mentioned above would best be diagnosed tuberculosis clinically. Often the pathologist has hard work proving that they are not.

In the group of cases where a local exudate gives rise to a tumor mass clinically, other tumors will have to be differentiated. Signs of tuberculosis elsewhere, history, age, etc., will help to make the case clear. It must be borne in mind that an actinomycosis of the intestine may be present. The peritoneum may be secondarily the seat of a carcinoma when the primary growth may be recognized in the stomach or other viscera.

In the group of cases where only adhesions are present with signs of chronic obstruction of the intestines, other causes of the latter, especially carcinoma, must be ruled out. Here, again, the history, age and other signs of tuberculosis elsewhere will be of value. The chronic non-specific adhesive peritonitis should be diagnosed tuberculosis clinically or a diagnosis withheld. The balance of probability is in favor of tuberculosis.

Peritonitis due to the pneumococcus of Fränkel-Weichselbaum has of late years attracted considerable attention. In a study of the autopsy findings in 171 cases of lobar pneumonia posted at the Cook County Hospital,² I found acute peritonitis noted in seven cases. In most of these there was only a slight plastic exudate present. The peritoneal involvement here is only a part of a general infection. In fact, two of the cases showed endocarditis also, and in one of the two pericarditis was present, too. Peritonitis due to the pneumococcus has been found in lesions

2. Kerr, Transactions Chicago Pathological Society, 1903, vol. v, p. 274.

of the gastrointestinal tract without pneumonia, and the organism must be considered a fairly constant inhabitant of the alimentary canal. It is known that it is usually to be found in the mouth. Ghon³ considered the mouth to be the atrium in three of four cases of fibrinopurulent peritonitis following gastric lesions with perforation—ulcer in one case and carcinoma in two. The fourth case showed pneumonia due to the pneumococcus and preceded the peritoneal lesion clinically.

The importance of these pathologic data from the standpoint of differential diagnosis lies in the fact that abdominal pain in pneumonia is not always to be considered as a referred pain, but in some cases indicates actual peritoneal involvement. A few cases occur where the exudate is large enough to give rise to physical signs, and then only the history and course will reveal which is the primary process. In the group of cases following gastrointestinal lesions the bacterial diagnosis is only to be made by the examination of the exudate.

That the gonococcus gives rise to an adhesive peritonitis has long been known, and every one knows how frequently these adhesions occur. Of late years several cases of general exudative inflammation have been reported. One such I saw with Dr. A. Loewy, of Oak Park. Following a periurethral abscess of gonorrheal origin, the patient, a young man of 21 years, developed abdominal pain and tenderness. There were well-marked signs of free fluid in the abdomen. The intestines were tympanitic and moderate constipation was present. There was some fever. Subsequently all these physical signs disappeared and an uneventful but protracted recovery resulted. While a positive diagnosis is impossible here, yet the probability is that we had to do with gonorrheal peritonitis. It was at any rate a peritoneal inflammation by infection through the vascular system of a relatively benign type. A positive diagnosis in such a case can only be made by bacteriologic examination of the exudate. It is important to remember, however, the possibility that such processes may be of gonorrheal origin.

To recapitulate, we have considered the pathology of peritonitis, the symptoms and signs of acute general and local peritonitis and their differential diagnosis, the diagnosis of the cause of peritonitis, the diagnosis of typhoid perforation, and the pathology and diagnosis of the specific forms—tubercular, pneumococcal and gonorrheal peritonitis. The secret of success in making a diagnosis of peritonitis as of any other condition lies in the complete and comprehensive study of each case and in drawing logical deductions therefrom. A not inconsiderable group will be found where a clinical diagnosis without operation is impossible. The surgeon will settle some of these for us, but there will remain a few for the pathologist to clear up. The late Professor Fenger, than whom no more careful student and no surgeon of better pathologic training ever lived in the west, once operated on a case for perforation of an appendix where the autopsy disclosed general sepsis with peritonitis following vaccination. Such examples should prevent us from becoming too dogmatic in our diagnoses.

3. Ghon: Wiener Klinische Wochenschrift, 1904, vol. xvii, p. 267.

PATHOGENESIS, ETIOLOGY AND PATHOLOGY OF
PERITONITIS.*

WILLIAM A. EVANS, M.D.

CHICAGO.

The agreement between Dr. Ticken and myself is that I will discuss peritonitis, including the inflammatory accumulations of fluid, while he will discuss the non-inflammatory accumulations. As to the major portion of the etiology of peritonitis, there is but little room for discussion. The following points will be stated without argument or explanation.

The exciting etiologic factors in peritonitis are:

1. Any of the pus-producing bacteria habitually resident in the gastrointestinal canal or capable of securing easy entrance thereto.
2. Any of the facultative parasites, such as colon bacillus, which are habitually or temporarily resident in the gastrointestinal or genito-urinary tracts.
3. Any of the parasites capable of exciting inflammatory reactions, non-suppurative in character, e. g., tubercle bacillus.

ROUTE OF INFECTION.

Two are of consequence. In order of importance, they are: 1, The genital tract in the female; 2, the gastrointestinal tract; 3, the urinary tract; 4, adjacent cavities, e. g., pleura; 5, adjacent tissues, e. g., injured fascia, perinephritic abscess, caries of the bone; 6, blood stream infection.

Peritonitis is usually an infection by the lymph route. It is seldom a blood stream infection. The reason for this I am at a loss to understand. For example: of the pleurisies, with relatively acellular effusion, 56 per cent. are tubercular. Most of these are without concomitant lung lesion. In the last 1,000 autopsies made at the Cook County Hospital, there were small pleural and subpleural healed tubercles in 283. Tubercular peritonitis, in the first place, is quite rare. In this series of autopsies already referred to, there were 33 cases, 3.3 per cent., of miliary tuberculosis with involvement of the peritoneum, of which 16, or nearly one-half, showed tubercular ulcers. The last case of miliary tuberculosis, posted by me two weeks ago to-day, showed miliary tubercles in the lungs, liver, pericardium, spleen, kidney and peritoneum, accompanied by scores of tubercular retroperitoneal glands, the largest of which were 5 cm. in diameter. In this case, there was no break in the mucous membrane of the gastrointestinal tract or the adjacent tracts. The possibility of infection of the adjacent lymph ways by tubercle bacillus through an intact mucous membrane is generally accepted at the present time. Cummings, in a study of 3,405 autopsies at the University of Pennsylvania, found infection of the peritoneum in 92, or 2.7 per cent. or 11 per cent. of all cases of tuberculosis. Borshke, in 4,250 autopsies, found it in 226, 5 per cent.

* Read before the Section on Medicine, Illinois State Medical Society, at Springfield, May 15-17, 1906.

We hear so much of the genito-urinary route of infection of the peritoneum in females that I have been surprised to find the relative infrequency of tubercular peritonitis in the female. In the estimate of the importance of different routes of infection of peritonitis, the genital route in the female was placed first. This was in consequence of the fact that 70 per cent. of all peritonitis is suppurative in character and due to one of the habitual pus organisms or a bacterium, such as coli, capable of becoming a pus producer. According to Nothnagel, 24.8 per cent. of all peritonitis is tubercular. Cummings' figure is 25 per cent. Cook County Hospital autopsies do not give bacteriologic data. About 5 per cent. of all cases of peritonitis is due to subinfection, continuous leakage of mild bacteria, eventuating in serositis, porcelain peritonitis, etc. This leaves 5 per cent. for all other forms. In this 70 per cent. group (the pus infections), the female genital tract ranks higher than the gastro-intestinal tract or any other.

In the 25 per cent. group (the tubercular infections), we are confronted with the following figures: Osler says that of tubercular peritonitis 70 per cent. are in males. Vierordt says 80 per cent.; Cummings, 65 per cent.; Sick, 80 per cent. If we were to assume that the female was equally liable to contract tubercular peritonitis through her gastrointestinal tract and through other routes, we would be justified in contending that her genital apparatus serves to protect her in some measure against this infection. It would not, then, seem to be a matter of enormous moment whether the tubercular salpingitis, which we find in these cases, precedes or follows the peritoneal infection.

In a series of experiments, we found that when virulent tubercle bacilli were injected into the peritoneal cavities of monkeys the major infection was found in the dependent portions. In female monkeys, walking upright, it was found in the pelvic peritoneum and especially around the Fallopian tubes.

In the entire series of 1,000 autopsies at Cook County Hospital, tuberculosis was present in 481, or 48.1 per cent. Of these, 163 had ulcerative consumption and, of these, 76 had tubercular intestinal ulcers. Of the 283 cases in which the tubercular nodules were recorded as healed, there were 12 cases with tubercular intestinal ulcers. When these are added to the 16 cases of ulcer associated with miliary tuberculosis, we have 104 cases of tubercular ulcer of the intestines. These figures demonstrate a tolerance of the peritoneum for tubercle bacilli, a tolerance which the surgeon had previously discovered. It is with him an axiom that some cases of peritoneal tuberculosis with ulcer recover after exploratory section, whilst most cases recover in those cases, where there is no ulcer.

Five per cent. of peritonitis is of the serositis type. That is, the subinfections with intestinal bacteria of a very mild grade of virulence. As these cases are not recognized clinically, unless they are widespread, I think that the percentage is very much higher. In fact, it has been my experience that every adult coming to autopsy shows some evidence

of bacterial leakage in his abdomen. In a study of the last 3,550 autopsies at Cook County Hospital, periappendiceal adhesions were found in 486, or 13.6 per cent. Comparatively few of these adhesions were due to suppurative infection. Most of them were mild progressive productive inflammations of the periceal and periappendiceal tissues due to bacterial leakage. It has been my experience that there are other regions of the abdomen in which these adhesions are still more frequent. Where the splenic flexure crosses the psoas muscle, such adhesions are almost habitually encountered. Adami and his school were right in recognizing the etiologic relations of subinfection. In the main, Byron Robinson was right in ascribing etiologic importance of the physical factors contributed by the contraction of the psoas muscle. Let us keep clearly in mind that this periappendicitis is not and has not been suppurative appendicitis, and the finding of such adhesion bands does not mean that there has been previous attacks of suppurative appendicitis. However, such adhesions are determining factors in suppurative appendicitis. The importance of appendicitis comes not from the infection, but from the difficulty of drainage of this narrow tube, anatomically so arranged that, when it swells, it must swell inwardly. Anything which compromises the physics of this organ is of major importance, because the physics of the appendix is paramount. Such adhesions may determine suppurative appendicitis. The physical factors I have considered in a paper on stricture subsequent to intestinal anastomosis, read before the American Medical Association. The points there made were that strictures developed in the intestine only at those points where the tube was bound, so as to prevent longitudinal movement; that even annular ulcers, in which there was a good deal of scar tissue from infection, did not develop strictures, unless the ulcer was situated at some fixed point, such as the rectum, the fixed points in the colon, etc. The scar connective tissue fibers, running always in the direction of pull, would not be found circularly arranged where there was longitudinal or vermicular movement.

The localized growth of subendothelial adhesions, due to subinfection, is seldom of consequence, except around the narrow tubes, as the appendix, the Fallopian tubes, the gall tract and possibly the pancreatic ducts. In consequence, localized serositis is overlooked in autopsy reports, except in these localities. That it is present in most adults has been my autopsy experience. When it becomes more general, spreads to the convexity of the liver and spleen, the parietal peritoneum, the adjacent serous cavities, we have to deal with polyserositis, a definite clinical entity, but one that is usually overlooked clinically. The lesions of these infections are usually described as occurring in the upper abdominal segment, thus agreeing with MacCallam's opinion that the route of travel of substances in the peritoneum is toward the central tendon of the diaphragm. The polyserositis lesions are most frequently found on the anterior surface of the retroperitoneal space on the convexity of the liver and spleen and on the under surface of the diaphragm. But few are noted anteriorly or inferiorly in the abdomen. Why these subinfections travel up and tubercular infections settle down into the pelvis is diffi-

cult to understand. It must be because the very mild bacteria are allowed to flow along in the physiologic way, whilst barriers are placed for those which are more virulent. Yates has shown that any pus-infected area of the peritoneum, unless lytic bodies are very active, is made extra-peritoneal in about six hours, whereas relative encapsulation is immediate. I can only suggest that in subinfection the bacteria (e. g., colon) are allowed to flow along the physiologic route. The milder forms of pus cocci and the non-virulent forms of tubercle bacilli are encapsulated and made extraperitoneal, relatively so in a few minutes, absolutely so in a few days, with much individual variance. The more virulent forms of bacterial infections, especially suppurative bacteria, are lytic to any encapsulative material and, therefore, freely spread along the physiologic absorption routes.

DISCUSSION ON THE SYMPOSIUM ON SEROUS INFLAMMATIONS OF THE THORAX.

Dr. E. F. Ingals, of Chicago:—Mr. Chairman: Dr. Taylor spoke of several punctures being made and the failure to find pus. I do not think that there was any particular harm in making these repeated punctures, and I thoroughly agree with him. It occurred to me, however, that in the majority of the cases that require several punctures it is not empyema but a pulmonary abscess that we have to deal with, and there is no objection to hunting for the abscess.

He said that when the empyema is discovered there should be immediate drainage. I do not wish to take exception to that statement, though I do not exactly agree on the time of the withdrawal of all the pus. I think it is much better to drain promptly, but not completely. We should withdraw as much of the pus as we can without causing uncomfortable symptoms, but when the patient begins to cough or has a feeling of weight and pressure on the chest which is possibly attended with a good deal of pain, we should cease aspirating at once. I do not favor opening the chest radically at this time in most cases, but I would repeat the aspiration again and again every four or five days until the chest had been entirely emptied before making the larger opening for free drainage. I think we get better results in this way in the majority of cases as the lung dilates more rapidly.

One of the essayists in speaking of the physical signs of pleurisy, spoke of vocal fremitus. I want to emphasize the value of this sign in distinguishing between fluid and a consolidated lung. Many of the points that he brought out are often not even thought of by the physician, yet they are very important; but this particular sign should be emphasized for the benefit of the younger men of the profession.

I was greatly pleased with the last speaker's paper, because it seemed to me to show clearly what the consensus of opinion would be among competent observers after long experience. This address was not a compilation, but the record of personal experience. I think most of us who have practiced for some years have had the same experience. I am heartily in accord with what was said about the various pastes. I do not order them, but if people want to use them I do not object. The application of heat, by means of the hot water bag, was not mentioned. The Leiter coil may be used with hot water as well as cold. Neither was the oiled silk jacket mentioned. I speak of these because one of the other speakers objected to poultices, claiming that they are in the way of examining the chest. The oiled silk jacket should be made in two pieces, pinned together at the sides. A layer of cheesecloth should come next to the skin, then oiled silk, then two inches of cotton, and then some more cheesecloth. This will hold the heat as well as a poultice. It does not require frequent renewal. It is easily lifted from the

chest, and the heat can be increased if necessary by laying a hot water bottle against the chest. In the thirty-five years that I have practiced medicine I have never seen any good come from the use of tincture of iodine applied to the chest at the seat of pleurisy. In the treatment of serous exudates which have lasted a considerable length of time, the question arises as to when we should aspirate. I have always instructed students that the serous exudates, excepting where there is unusual pressure, should not be withdrawn for ten or fourteen days, because the serum is there for the purpose of keeping the two inflamed surfaces apart. When the exudate remains longer than two or three weeks without diminishing decidedly, I am accustomed to direct that it should be withdrawn. My experience has not been the same as the last speaker's with reference to pleurisy that may have been of tubercular origin. I have not seen ill effects from the removal of fluid after it had been present for three weeks. The statement has been made that aspiration causes tuberculosis in the lung to increase. Possibly this is true in rare cases, but I am confident that the number of cases that would be greatly benefited by the removal of the fluid is very much larger than the number that would be injured. As to the prevalence of tuberculosis as a cause of pleurisy, I think that the belief that nearly all cases of pleurisy are tubercular is wrong. If there is tuberculosis in the lung then we may take it for granted that a concurrent pleurisy is tubercular, but if not, then it is necessary to demonstrate the presence of tubercle bacilli in the fluid either by the microscope or by inoculating guinea-pigs before we are justified in attributing the pleurisy to tuberculosis. Dr. Bowditch traced the history of 250 of his father's cases that were aspirated for pleurisy, and he found that within fifteen years 50 per cent. of these patients had pulmonary tuberculosis. Inasmuch as nearly every one has pulmonary tuberculosis at some time (97 per cent. of all adults, according to Wageli's figures), it would not be strange that 50 per cent. of those patients should have it within fifteen years, even if tuberculosis had been the cause of the pleurisy in only a very few. I think it is an error to assume that pulmonary tuberculosis is a large factor in the etiology of pleurisy.

Dr. Arthur R. Elliott, of Chicago:—I have but a single comment to make, and that is with regard to Dr. Davis' statement relative to the treatment of pulmonary effusion. He advocates waiting until two weeks have elapsed, or until evidence is at hand of the persistence of the effusion. He rather discouraged the resort to paracentesis in pleural effusion of subacute tubercular origin. Some years ago Dr. Austin Flint, Jr., advocated very strongly the early withdrawal of pleural effusions in all cases in which the effusion was sufficient to cause displacing of the heart, with much increase of the intra-pulmonary tension, and with resulting increased labor to the right heart. He reported a series of cases, which were certainly very strong proof of the efficiency of this practice. Since then I have made this my guide, and I perform early paracentesis, repeating it in all cases in which the effusion is considerable, and, especially, when the heart is displaced, repeating it as often as is necessary to keep the pleural cavity free from accumulations of fluid. I insist on this particularly when there is any evidence of cardiac trouble or nephritis, where pleurisy is apt to occur. I have come to dread the presence of a pleural effusion, in cases where there is a bad heart. I draw the fluid off early under the strictest aseptic precautions, because it limits the formation of adhesions and takes the strain off the heart.

Dr. Arthur Dean Bevan, of Chicago:—I have been asked to discuss the surgical treatment of peritonitis. In the discussion of this question we must discuss three methods of treatment: The saline treatment, which has been advocated especially by gynecologists; the rest and opium treatment, which has been advocated especially by the internists, and some surgeons; and the operative treatment, which is that of the surgeon, as a rule.

The saline treatment of peritonitis is really an impossible one from some standpoints. There can be no doubt, as shown by Day, that in some cases where

the symptoms would lead one to believe that we have to deal with a peritonitis, and where it really may have existed, the employment of salines to the extent of eventually producing catharsis has been abandoned. However, one must analyze very carefully the conditions which are present in these cases. The cases where the saline method of treatment of peritonitis is of value are cases in which we have to do with a partial paralytic ileus, and where the danger to the patient is not from absorption to the peritoneum, but from absorption to the mucosa. In other words, where this method is of value, is only in freeing the alimentary canal of toxins which would be absorbed by the mucosa and produce very serious and some times fatal results, as are produced, for instance, in cases of ileus. Patients frequently die from ileus without any peritonitis as the result of an intestinal toxemia. So that in many cases where there is this partial ileus the so-called saline treatment of peritonitis is of distinct value. Of course, it has been shown by autopsies *in vivo* that in a general way the saline treatment of peritonitis is of no value whatever.

In the same way one can speak of the rest and opium treatment of peritonitis. It is of no value in cases of general suppurative peritonitis, but is of distinct value in cases of circumscribed peritonitis. Without doubt, many cases of peritonitis, which are limited and circumscribed, are prevented from becoming general by the opium and rest treatment, and, as a general proposition, in the cases of appendicitis, in which the conditions surrounding the patient are such that he can not be given the benefit of a better treatment, i. e., the removal of the focus of the disease, the opium and rest treatment is advisable. Frequently, some organic lesion or the inability to give the patient an anesthetic, so that operative intervention is out of the question, makes it better to handle these cases by this method than by the operative treatment.

When we come to cases of general suppurative peritonitis, there is this to be said, that the operative treatment is largely prophylactic. The case that is saved is the case that is operated on early, the damage done to the alimentary canal repaired so early, the noxious fluids which are in the peritoneal cavity removed so early, the peritonitis never results. The cases which appear in the literature of gastric perforation that are operated on in a few hours, with the perforation controlled and the leakage prevented by a few pursestring sutures, those are the cases where peritonitis is actually prevented from developing, as a rule.

Now, we go a step farther, and we have the cases of general suppurative peritonitis complicating gastric ulcer or appendicitis, where the noxious material has been in contact with the peritoneum for hours. Here the operative treatment of the modern surgeon shows wonderfully better results over the operative treatment of five years ago. What was it five years ago, when McCosh, Senn, and others, discussed this treatment before the American Surgical Association in Washington? It was evisceration of the patient. The intestines were exposed, turned out on a hot towel, and the pus was wiped off from the surface of the peritoneum, with the result that the majority of these patients died. In these cases, to-day, without a bit of exposure of the intestines, with the finding of the focus which is responsible for the peritonitis, and with the prevention of further leakage by proper suture, we wash out all the noxious material from the peritoneal cavity, instituting drainage or not, as may be required. The great majority of these patients recover. I can say that from my own personal experience. All the cases of general peritonitis which we have had in the last three years have been handled successfully. I mean typhoid perforations, gastric and duodenal ulcer, and appendiceal perforations. We look for the focus, control the point of leakage, wash out the noxious material, and then suture. Take, for instance, a duodenal ulcer with perforation. You find on opening the abdomen an ulcer high up and a limited amount of material about it. How do you know whether the entire peritoneal cavity is full or not? Or take a perforated appendix. You expose the appendix and find a little fluid about it. It is a question whether there is a gross

involvement. The method of exploring the entire abdomen with a female glass catheter, introduced through the wound into the cul-de-sac, placing the thumb over the catheter, and then withdrawing the latter, will surprise you in the manner that this glass catheter will test every part of the abdominal cavity. If there is a dram of pus in the cul-de-sac, the catheter introduced into it will draw out a large part of the pus. In the same manner you can test the region of the liver. If there is a fluid, wash it out, and then put in a small cigarette drain through a counter opening above the pubes down to the appendix.

For three years Blake has been doing away entirely with these counter drains, making immediate closure. He finds that his results have been much better than they were in cases where he had established drainage. I have not yet been willing to dispense entirely with the drainage, but certainly the success we have had in the last five years warrants us in saying that the great majority of cases of general peritonitis, the result of perforation, if operated on in the first twelve hours, can be saved, but they can not be saved in any other way than by surgical intervention.

Dr. A. E. Halstead, of Chicago:—It is impossible to discuss the surgical treatment of peritonitis without taking into consideration the bacteriologic cause. There are certain types of general peritonitis that do not belong to the surgeon. In this class surgical treatment is not indicated, because the patients die whether operated on or not. I refer to the type of diffuse septic peritonitis, the result of a streptococcic infection, where there is little or no exudate, but the entire peritoneal surface is inflamed. No treatment is of any avail. My results in general suppurative peritonitis have not been as good as those of some other Chicago surgeons. I can not cure 75 per cent. of the cases I see. I have come to a conclusion, that, in cases that do get well, the drainage has been of little practical value.

I want to emphasize the great necessity of removing the cause. A few years ago we were taught that all that was necessary, in general peritonitis, was to open up the abdomen and drain, without looking for the cause. Now, we invariably search for the cause of the peritonitis and remove it if possible. It is always removable if due to a perforation of the appendix or an ulcer.

As to the value of drainage, we must realize that within a few hours after we place the drain in the abdominal cavity, the drainage channel is shut off from the peritoneal cavity and the only space you are draining is the part occupied by the drain, and that the drainage of this small cavity can in no way affect the inflammation that is present in other parts of the abdominal cavity. It is difficult to see how any treatment that we can institute, other than the mechanical removal of the pus and fluid, can be at all effective. I believe that the patients that recover from general peritonitis are those who have a very mild form of infection of some kind. I do not consider that any intense infection, if distributed over the whole peritoneal cavity, is susceptible to any curative treatment, except in a few cases where the resistance of the patient is great or the infection is of a mild type. I have had a considerable experience in the treatment of general peritonitis, and I consider it more good luck than good surgery when my patients recover. I am not speaking of cases of local peritonitis where only a small portion of the peritoneum is involved. In those cases, if you remove the cause, sponging out the part involved, the patients will get well. But in the cases where there is a general infection of the whole peritoneum, the prognosis, from my point of view, is extremely unfavorable.

Dr. W. A. Evans, of Chicago:—The first essential of the medical treatment of peritonitis is to find the route in which the infection has occurred, and to remove that source of infection when this is possible. I believe that that as a factor in the treatment of peritonitis should never be lost sight of; and so far as this consideration carries we should never let the issue be doubtful by contemplation whether this is a medical or a surgical case. I tried to make plain in my

paper that peritonitis was usually an infective disease, in which the route of infection was some one of the adjacent viscera, and it is not infrequently due to primary infection, in some adjacent viscus, which can be located and which can be operated on. Therefore, whether we call it the medical or the surgical treatment of peritonitis the paramount duty of the diagnostician is to locate the atrium of infection and to determine as best he can what is possible in the way of eliminating this atrium.

The next question that must be answered is, what is the proper medical treatment of those cases in which, for one reason or another, the case must be treated wholly or in part as an internal disease. I believe that there are certain cases of peritonitis in which a certain amount of exhibition of opium is desirable, just as there are certain cases of cough, of vomiting, of constitutional perturbation of one sort or another in which constitutional coma, for a few hours at least, is desirable, but I believe that so far as the regular routine treatment of a single case or of a considerable number of cases is concerned, that the use of morphin in the treatment of peritonitis is of limited value, and usually does harm.

I believe that there is no specific treatment for peritonitis at the present time. For that reason there is necessity for more of medical treatment than in those diseases where there is possible a specific treatment. You can all remember the time when you were called in on a case of diphtheria, and you had to carefully nurse and treat the patient through two or three weeks. Then there came a time when there was found a specific, and all that was necessary for the physician to do was to go and see the case, make his diagnosis, and inject antitoxin. A number of years ago Dr. Bevan was quoted as saying that there was no treatment for pneumonia. The conclusion was drawn at once that there was no place for the doctor in the handling of a case of pneumonia. The point he wished to make is that in these diseases where there is no specific medication, there is increased demand for medical supervision and treatment, the treating of symptoms and conditions as they arise.

I wish to advocate in these cases the saline treatment and to emphatically disagree with most that Dr. Bevan said on this proposition. The saline treatment I now refer to is the continuous injection into the rectum of saline solution, with an apparatus so devised that there is a continuous slow flow of the solution into the bowel, a flow that is just as rapid as absorption is possible, so that there is no escape of the fluid from the bowel. It is poured into the general circulation and is eliminated in part by the skin and in greatest part by the kidneys. These people die from toxemia, because their nervous system is affected. It is not possible to wash out the peritoneal cavity by any method of drainage devised, and any surgical procedures directed along this line have been abandoned. But it is possible to wash out the general blood supply with salt used in the manner indicated, and I have seen cases of sepsis, puerperal sepsis, and other forms of peritoneal infection, in which there have been marvelous results obtained by this continuous rectal injection of salt solution.

Dr. Channing W. Barrett, of Chicago:—The division of the treatment of peritonitis into that of surgeon, internist, and pathologist is most unique. Had the previous speakers divided peritonitis into pelvic peritonitis and perforative peritonitis, the former falling into the hands of the gynecologist and the latter into the hands of the surgeon, the treatment of the one having no great tendency to becoming extensive, being slow in onset and usually limited to the tubes, having no great tendency to immediately kill the patient, but to destroy the pelvic organs, then I might have spoken of the treatment by the gynecologist. The gynecologist can be something of an abdominal surgeon, and has acquitted himself fairly well as such. Therefore, instead of dividing these cases into cases to be treated by the general surgeon and cases to be treated by the gynecologist, they should be divided according to the nature of the case. If the surgeon gets hold of the pelvic case, we hope he will treat it well. We drain pelvic peritonitis much quicker than we did formerly. We open the posterior cul-de-sac early and drain. Thereby we get a better condition of the tubes afterward.

DISEASE IN THE AGED.*

W. H. CURTIS, M. D.

, WILMINGTON.

It was with a becoming degree of hesitancy that I acceded to our chairman's request for a paper upon disease in the aged, because profoundly conscious of my own inadequacy to properly perform the task. However, my connection with one of the state institutions, maintained for the care of this class of patients, having afforded me, perhaps, a better opportunity for observing the processes of disease in the later decades of life than is given to most of you, as it certainly has afforded me abundant opportunity for recognizing the urgent need of a more thorough and exhaustive study of these processes, must serve as my excuse for this paper, which I trust may, at least, help to excite your interest in its subject, even if it fails to instruct.

The senile individual would, *a priori*, appear to offer peculiar attractions for the scientist and therapist. for, according to modern ideas, senility is but the incarnation of disease itself; in other words, the weight of evidence seems to establish the fact that old age is never physiological but always pathological—at least its visible and appreciable evidences are pathological ones. But what are the facts? If one turns to his library for some authoritative work upon the diseases of this period of life, unless peculiarly fortunate, he is doomed to disappointment. Inquiries made of our medical publishers for an up-to-date work upon this subject have, with me, proved unfruitful, but their replies have invariably been accompanied by announcements of innumerable recent works upon the diseases of infancy, adolescence, and adult life.

It is true there exists an extensive literature upon the subject, but it is so widely diffused as to make it practically unavailable. In this day of many specialists it may well be asked why this should be so. Is it because we look upon the aged as we do upon an outworn garment, not worth the mending? This view hardly appears creditable to our philanthropy, even were it possessed of economic value, which it is not; for many a mentality of eighty is of infinitely greater value to the state than is the mentality of twenty. What might we not have hoped for from the genius of a Humboldt, a Faraday, a Pasteur, could our art but have prolonged the span of their usefulness but a few more fleeting years? And the pity of it is we know this very desirable result might well have been accomplished.

This may sound like mere unwarranted assertion, but I think you will agree with me that it would not prove an arduous task to formulate a plan of life, by the observation of which a race of individuals might be reared; whose span of life might confidently be expected to reach the norm of five score years; and it is encouraging to know our theories upon

* Read before the Section on Medicine, Illinois State Medical Society, at Springfield, May 15-17, 1906.

these subjects are slowly materializing, the average age of the individual is gradually growing longer. But it must be observed our most notable results in this field have been obtained in the periods of infancy and adolescence, and should not be taken as applying to all periods of life. I have not reliable figures at hand pertaining to our own country, if such exist, but in Great Britain, since 1859, the death rate in all ages under 55 has declined 17.5 per cent, only 2.7 per cent, however, in ages above 55, while, between 65 and 75, there has been an actual increase.

Investigations have shown that only some nine hundred in the million die a natural, physiological death, fall as does the fully ripened leaf; all others come to their graves by processes strictly pathological and unnatural. These few figures would seem to indicate that we are not doing our full duty by "the old folks."

The pathological processes resulting in senility are now quite well understood, as are the methods for their prevention; but, as I have already intimated, this knowledge is so widely diffused throughout medical literature that its usefulness to the general practitioner has been greatly restricted. As the etiology of disease in the aged frequently antedates the advent of years, it is manifestly impracticable to fix upon any hard and fast rule by which to determine whether any particular number of individuals are old or young; this can only be determined by their individual pathology, an accurate estimation of which will frequently disclose the fact that one individual is old at twenty, while another at eighty is still young. Probably as good a working rule as any is the well known axiom "a man is as old as his arteries," and this thought was apparently recognized by the poet long before its adoption by the profession in its axiomatic form, when he said: "We measure time by heart throbs, not by figures on a dial." It has of course long been recognized that certain changes in the circulatory system were the almost constant accompaniment of diseased processes in the aged, and sometimes, too, it has been recognized that these changes were apparently the direct and immediate cause of the disease. But unfortunately, the idea has too long been entertained that this hyperplasia of the arterial coats was the inevitable consequence of advancing years, in other words, a normal, physiological process. When in time we learned our error, search was instituted for the cause of these pathological changes. Reasoning from analogy and clinical experience, it was soon proclaimed that syphilis was the etiological factor in fifty to seventy-five per cent of all cases of arteriosclerosis. Then alcohol had its day in court, and was thought to even outrank syphilis as a causative factor. Lead, mercury, and other mineral poisons have all had their champions, but, as might have been foreseen, none of these were found applicable in all cases.

As our pathological knowledge increased, our etiological boundaries widened, and while it appears to be firmly established that this condition is always the result of poisoning, either introduced from without or generated within, I think it is now generally recognized that not one but

many poisons, be they mineral, vegetable, leucomain, ptomain, or what not, may be and are the cause of this condition. The profession is to be congratulated if this knowledge shall contribute to help us to forever renounce our worship of the fetich of disease, *per se*, and bring us back again to the fold of our fathers, who taught us the concentrated wisdom of medicine in the axiom "generalize your disease and individualize your patient."

If, then, arteriosclerosis is to be accepted as the primal factor in the diseases incident to old age (and without doubt it may be so accepted), it naturally follows that it is eminently essential that a most thorough and exhaustive investigation of the evidences of this condition be instituted, in those cases where it may be suspected to exist. While exceptional practitioners do employ modern methods for the determination of this question, I am persuaded that the great majority do not. As the distinctive symptom of this condition is admitted to be the pulse of high tension, it is permissible to enquire how this high tension is determined to be present or absent. There may be a few skilled diagnosticians, whose *tactus eruditus* is so abnormally developed that they can detect the very onset of this condition, or, at least, early enough to render their therapeutics of avail. But this almost superhuman skill is not vouchsafed to most of us. At that late stage of the pathological process when the radial artery rolls like a whip-cord beneath the finger, when the left ventricle has become hypertrophied to twice its normal thickness, and when one can observe the throbbing of the carotid across the room, then even the tyro can make the diagnosis. But when this stage is reached, the possible results of effective therapeutics are enormously diminished.

We have, however, an instrument of precision, not so generally employed as I think it deserves to be, which will usually enable us to determine the advent of this condition in ample time to render effective therapeutic aid. I allude to the sphygmomanometer, very many observations with which lead me to regard it as fairly accurate as between individuals, and quite reliable as to different readings in the same individual. I am convinced that the more general employment of this very useful diagnostic aid will not only prove of great benefit to a rather large class of patients, but that it is also liable to contribute something in the nature of a surprise to many a practitioner, when he thus, for the first time, discovers the unmistakable evidences of senility in those still young in years.

My observations have led me to conclude that there is a somewhat numerous class of persons in the middle decades of life who exhibit such symptoms as languor, lassitude, defective memory, perhaps headache and irregular breathing, with possibly vertigo, etc. In short, they present the symptom complex of neurasthenia, and as such they are, I think, usually diagnosed. When subjected to the proper test they will be found to have a pulse of high and increasing tension, and are, therefore, really cases of incipient arteriosclerosis. The correct diagnosis of these and similar cases opens up a broad field for effective therapeutic effort, in-

cluding the prevention of many secondary affections, such as heart and kidney diseases, neuroses, etc.

But it must not be too hastily concluded that even in advanced cases of arteriosclerosis, such as are so frequently seen in those advanced in years and evidenced by the rigid artery, hypertrophied heart, defective elimination, etc., that nothing can be done for their relief. Given a patient old in years and old in his arteries, with an hypertrophied heart that staggers under its weary load, with veins surcharged to bursting, bodily functions in practical abeyance, respirations hurried and irregular, mentality a comparative blank, their rising up a sorrow and their lying down a torture hardly to be borne—what of these?

That the picture is not overdrawn you know, for you have seen it frequently; that it is one before which we need not despair I think I know, for, during the past ten years, I have had a hundred such pictures under daily observation.

I do not pretend to be a worker of miracles, medical or otherwise, but I do wish to say that suitable environment, appropriate attention to diet, functions, clothing, exercise, etc., in short, the observation of the whole train of hygienic virtues, and, above all, the lifting of the load from the overweighted spring will surely result in the restoration of at least a portion of its lost elasticity. The attainment of desired results in senile disease is attended by difficulties not met with in those in whom metabolic changes are, for physiological reasons, more quickly and easily accomplished; but those cases are rare in which Nature is not willing to meet the physician at least half way. Indeed, the possibilities for partial if not complete restoration in these outworn machines frequently appears to border upon the marvelous.

In this connection I desire to say that I think our text-book dictums concerning these matters need revision. Old age and acute disease do not invariably spell death, as we are so frequently taught to believe.

As an illustration of this I would call your attention to the almost axiomatic teaching that pneumonia in those over 60 justifies a fatal prognosis. No one man's experience can determine a question like this, but my personal observation, given for what it may be worth, is that pneumonia, *per se*, is much less fatal in the old than it is in the young and middle aged. In the institution with which I am connected, with its one hundred inmates of an average age of 84 years, we have had within the past ten years seventy odd cases of pneumonia in its varying types, with no mortalities. I do not mention this at all boastfully, for I realize that it may be explained by the law of coincidence, but as this experience corresponds in the main with that of some 3,500 cases seen in private practice I may be excused for expressing the belief that pneumonia is not always nor necessarily a fatal disease in the aged. That it may be made so, by inappropriate or excessive treatment, is, I think, indisputable.

I spoke a moment ago of the difficulties attendant upon the treatment of the senile patient; these are many, and are not all to be accounted for by gross pathological changes. One of the difficulties with which I have had to contend has been the pernicious habits and modes of thought that

are the outgrowth of and have become fixed by time, in other words, the personal equation. This difficulty is not limited to any age, but it seems to attain its maximum in the aged. Every "old granny" has her infallible remedy for every ill, and many a brilliant medical reputation has come to wreck upon this uncharted rock. Fetish worship is still extant, and though it take the form of goose-oil, skunk-oil, or catnip tea, woe betide the young graduate who lays ruthless hand upon their altars. Probably the greatest single evil in this particular with which we have to contend is the widespread and altogether damnable habit of nostrum taking; to which pernicious habit more deaths among the aged are due than to any other three causes. These observations are not novel, and apply well to all periods of life, but seem peculiarly applicable to the period of old age, when we are called upon to deal, not only with the degeneracy of tissue, disease itself, but with the ultimate results of long years of wrong living; fixed habits of thought; prejudices, wrong perhaps in their inception and very essence, but almost or quite ineradicable in their dominant growth; perversions of function and of volition; enfeebled mentality, with all its train of attendant evils; together with scores of other evils and obstacles not met with in earlier life, all dominated, perhaps, by a strong and abiding faith, amounting at times to a real obsession, in the efficacy of the medicine bottle to again restore to them their lost youth. For these and many other cogent reasons, it is evident the diseases of no period of life present so difficult a problem for solution as do the diseases of old age; but as a complement thereto none appear to present a more interesting and fruitful field for study. As the difficulties attendant upon the ideal treatment of disease in the aged are so numerous, it naturally follows that the practitioner is called upon for the exercise of infinite tact and patience. Preconceived theories, even well grounded facts have frequently to be modified, even subordinated to individual idiosyncrasies. No two individuals travel through life by the same route, and the needs and requirements of each individual traveler are as variable as the vicissitudes of the weather, as changeable as the landscape upon the way; the "guide, philosopher and friend" of these old travelers must, therefore, oftentimes be content to travel their route, not his own.

I have had very little to say concerning the use of drugs in the diseases of the aged, not because I deem the subject of minor importance, but because I esteem it of such vast importance that at least a volume would be required to properly dispose of it.

However, I can not deny myself just a word or two in this connection. Our text-books are not very explicit in their expositions of the drug treatment of senile disease; the most significant general rule laid down for our guidance being, perhaps, that, in this extreme of life as in the other, our dosage should be greatly diminished. While perhaps correct, in the main it will be found wrong in practice in many instances, especially if the drug be administered *per os*. Indeed, many conditions appear to demand enormously increased dosage to secure desired effects. I pre-

sume this to be accounted for by diminished power of absorption, lessened cell activity, etc. Libraries have been written upon the subject of the senile heart, the heart with an hypertrophied left ventricle and an accentuated second sound; its weaknesses, its shortcomings, its fragility has been pictured to us in language most vivid and convincing. Notwithstanding all this, I wish to say that a somewhat intimate acquaintance with this much abused but very tolerant organ, extending now over a period of nearly forty years, has been productive only of sentiments of profound admiration and respect. Properly conserved, I regard the senile heart as the most wonderful illustration of endurance the world can afford. Whipped and spurred to herculean effort for untold years of ceaseless labor by the steadily narrowing lumen of the peripheral vessels, it has thrived under punishment, grown literally great under conditions the most adverse, and now, in its old age, with its audible and piteous plea for rest,—what is our reply? It has been estimated that nine-tenths of the profession habitually employ digitalis in all conditions of so-called heart-failure, as evidenced by diminished force, irregular action, diastolic murmurs, etc. If this estimate be even approximately correct, permit me to register my profound protest. Any drug which increases the force of the heart beat by increasing the load it bears, can not be spoken of as a heart tonic. This is exactly what digitalis does. An arterial constrictor only second perhaps to adrenalin in potency, it has, in my estimation, little or no place in the therapeutics of the hypertrophied, senile heart.

CONCLUSIONS.

(1) While the first requisite for longevity may perhaps be deemed to be an inborn, perhaps inherited quality of tissue structure, wherein one part shall be just as strong as another, like the materials of the famous One Hoss Shay, it is still manifestly possible and sometimes practicable to detect the onset of those pathological processes frequently originating in middle life, and whose development is synonymous with that symptom complex known as old age. Further, when a diagnosis is thus made, it is possible and frequently practicable to institute therapeutic measures that will ensure the prolongation of the individual life.

(2) The study of the processes of disease in the aged, together with their appropriate therapeutics, offers a rich field for individual research, and one that deserves more thorough cultivation. In this connection, our present knowledge of the subject needs thorough revision, amplification, and systematization at competent hands, and to be made more accessible.

(3) It is requisite to the successful study of disease in the aged, and certainly almost essential to the one who undertakes their management, that he be possessed of a peculiar mentality, combining not only a liberal education, but great resourcefulness in fact, patience, and sympathy.

Other things being equal, I am persuaded that practitioners will be most successful with this class of patients whose personal experiences have most thoroughly plumbed the heights and depths of both joy and sorrow, and who can say in his heart "these be mine own people."

SURGICAL ASPECTS IN THE AGED.

OBSERVATIONS OF FOUR YEARS' SERVICE AS ASSISTANT SURGEON TO ILLINOIS SOLDIERS' AND SAILORS' HOME.

GEORGE E. ROSENTHAL, M. D.

QUINCY.

The following paper is based upon fifty operations, occurring during a period of nearly four years. Forty-five of these were under general anesthesia. The mortality rate was 10 per cent.; the average age of the individuals operated upon was 66 years, the youngest was 53 and the oldest was 82. The average age of the fatal cases was 68.

The operations were as follows: Rectal work, 11; amputation of penis for carcinoma, 1; cholecystotomy, 1; leg amputations, 10; thigh amputations, 1; prostatectomies, 5; inguinal herniotomies, 10; femoral herniotomy, 1; external urethrotomy, 1; vasectomy, 2; ligation, external carotid artery, 1; extirpation epithelioma of lip, 4; enucleation of eye for sarcoma, 1; extirpation of tumor of abdominal wall, 1; total, 50.

It would seem, among a population of some 2,000 men, where 70 per cent. of them suffer from prostatic trouble or hernia, that many would seek surgical relief from these ailments. The hernia, however, is always a qualification for pension and they fear if it be repaired it will mean a reduction in the amount of that honorarium, hence they are loath to part with it.

Another deterring factor is their fear of operation, a fear engendered possibly by the memory of the results of operation in that epoch, when asepsis did not grant an eventless convalescence and when the boon of an anesthesia was almost unknown. Moreover, in addition to this constant underlying operative fear, the attitude which these individuals take towards abdominal work is curious. From their viewpoint, entrance into the closed cavity of the abdomen takes on the aspect of a defilement. They will contemplate an inevitable amputation with considerable equanimity but confront the idea of a laparotomy with great repugnance, almost abhorrence. In any event, the indication for operation must be obvious to the lay mind before consent is given.

A study of the table of operations will show an entire absence of laparotomies, except those for hernia and the one gallstone case. It seems that the indication for operation must be visible or palpable, as for instance a hernia or a gangrenous extremity, before operation is accepted. A surgical kidney, a pleural empyema or an enlarged prostate does not furnish this unmistakable evidence of pathological process and so surgical relief is refused.

The contra-indications to operation which we encounter are: 1, the age of the patient; 2, the advanced state of the disease when the patient reaches us, medical treatment having usually extended over a considerable period; 3, advanced arteriosclerosis; 4, chronic bronchitis; 5, kidney impairment or some form of urinary or genito-urinary disease. The advice of the family physician is, as a rule, against operations.

In these cases chloroform is the anesthetic of choice, but full anes-

thesia is sometimes difficult to obtain, because of alcoholic chronic addiction. Nevertheless, serious vicissitudes are rare.

The rectal conditions requiring treatment were, chiefly, hemorrhoids and fistula, with one case of prolapse and one of sigmoid enteroliths. In the latter case, these concretions were smooth, hard and faceted, three in number and together weighed two ounces. They formed a mold of the sigmoid and were removed, per rectum, after some difficulty. The symptom complex was that of a sigmoid carcinoma. A fistula complicated this condition. Among these old men, we notice that the sphincter takes a proportionately longer time to regain its tone after stretching than in younger patients.

The conditions necessitating amputation were: Chronic ulcer, 1; osteomyelitis, 2; frost bite, 1; senile gangrene, 7. In amputations below the knee, we find that the bilateral musculo-cutaneous flap method furnishes the most viable flap, in those with sclerotic arteries. It adds but a few minutes to the time of operation and may be done under local anesthesia. We have never had a slough, when this flap was used, but one cutaneous cuff amputation was followed by this complication. At times, the sclerotic arteries make hemostasis difficult, the ligature breaking through the brittle lime-incrusted arterial walls. This may be obviated by including a sufficient amount of surrounding tissue, excluding any adjacent nerve.

In prostatic cases, we encountered a decided aversion to operation. The part played by the offending gland may be explained at great length, yet consent to operate is withheld until absolute and continued retention exists. We have, however, secured good results by continuous catheter drainage, if the urethra be pervious and be not too tortuous or too difficult of passage. A linen prostatic catheter is sterilized by boiling, is passed into the bladder under aseptic precautions and is secured in place by adhesive straps, to be removed and replaced by another in twenty-four hours. Bladder infection is apt to follow the most painstaking technique.

Of the eleven herniotomies, ten were inguinal and one femoral. Of these, one femoral and five inguinal were strangulated at the time of operation. Of the other cases, one was complicated by cystic degeneration of the testicle. Adhesions to the cord are the rule and are dense and baffling, since the disability has existed for from 20 to 40 years. We notice also, in those having sclerotic arteries, the incidence of more recent hernias, due to the progressive arterial process and the simultaneous retrogressive change in the body musculature. In the same category is the pendulous belly of the aged. The operation of herniotomy is the most satisfactory of any we are called upon to perform and, notwithstanding the age of these men, we have had no recurrence in this series.

The cause of death is almost invariably an acute nephritic process implanted upon a kidney already impaired. This becomes manifest in from one to four weeks after operation, the urine contains albumen in large quantities and many casts, death occurring during uremic coma. The cases resulting fatally were: One prostatectomy after three weeks; one herniotomy after four weeks; another after two weeks; a case of anal

fistula in two weeks and a carotid ligation, followed by death in 48 hours, from aspiration pneumonia.

The dictum of Lawson Tait, to conserve your patient's resistance by finishing your operation in the shortest possible time, is nowhere more pertinent than in these cases.

MANIFESTATIONS OF RHEUMATIC INFECTION IN CHILDREN.*

C. MARTIN WOOD, M. D.

DECATUR.

While in adult life, rheumatism may be generally understood to mean an arthritis, it is quite different in childhood, as the rheumatic infection manifests itself by attacking widely separated structures. In this respect, it resembles most infections in children, which have a tendency to become general instead of remaining localized. Indeed, rheumatism is now looked upon as an infection, having all the characteristics of an infectious disease. F. J. Poynton of London has isolated a diplococcus from the tissues, which, in one case, produced rheumatic fever in a rabbit by inoculation from a culture. While bacteriological investigations are not conclusive as yet, they are suggestive, and the future may demonstrate a specific germ. One who practices among children must be on the lookout for tonsillitis, endocarditis, chorea, torticollis, and erythemas, as well as arthritis as evidences of rheumatic infection.

Dr. R. H. McConnell studied 500 cases of rheumatism in children at the Vanderbilt clinic in New York. These cases showed the following percentages: Tonsillitis, 35 per cent.; endocarditis, 23½ per cent.; articular forms, 23½ per cent.; chorea, 14½ per cent.; muscular rheumatism, 2 per cent.

Subcutaneous nodules and torticollis were present in fractional percentages. Many of these manifestations were complicated with each other but the percentages are given of the most pronounced. While, in many cases, the diagnosis of these conditions is not difficult, in others their recognition requires considerable care. In all cases, a knowledge of the family history and the previous history and predisposition of the patient is of great value.

Tonsillitis, as a rheumatic infection, is recognized by the history and by other manifestations, occurring simultaneously. The pain and aching is greater than we expect to find with the degree of redness and inflammation present. The pain often extends into the muscles of the neck. Salicylates are effective in relieving the symptoms.

Endocarditis may be either primary or secondary. Practically all the primary cases are due to rheumatic infection, whether the other symptoms are pronounced enough to attract attention or not. Nearly all the acute infectious diseases of childhood may produce the secondary forms, as may also septic infection from any source. The history of a preceding

* Read before the Section on Medicine Illinois State Medical Society, at Springfield, May 15-17, 1906.

illness or a suppurative focus would serve to differentiate the secondary forms. The primary or rheumatic form should be looked for carefully in any rheumatic condition and also in a routine examination in any obscure illness. Whenever, in the course of rheumatic arthritis or other manifestation of rheumatism, there is an increase of the fever, with or without increase of the joint symptoms, with a rapid or irregular heart action, with the first sound gradually changing to a murmur, endocarditis should be suspected (Caille).

Arthritis is rare under one year and not common under four or five years of age. In older children, it is more frequent and may be due to several causes. That due to rheumatism must be differentiated from scurvy, gonococcus or suppurative arthritis, tuberculous and syphilitic periostitis. Scurvy is recognized by the general condition of the child, the absence of fever, the condition of the gums and the prompt improvement under proper diet. Gonococcus or suppurative arthritis may be distinguished by the history and by a search for evidences of these diseases in other parts of the body. Tuberculous arthritis is slower in its onset. There may be a history of tuberculosis in the family. The joint surface is not reddened and there is limitation of joint movement, aside from that produced by pain. Syphilitic disease of the joint will be accompanied by other symptoms of the disease and will be relieved by anti-syphilitic treatment.

The frequency in which chorea is a rheumatic manifestation varies greatly, according to different authors. If the term "rheumatism" is used only to include arthritis, the number of cases is small, but if the broader interpretation of rheumatic infection is understood, the number is larger.

Holt believes it to be over 50 per cent., from his observation. In McConnell's list, it is given as 14½ per cent. but, as he remarks, it is significant that he found heart complications in about 70 per cent.

Of the rarer forms, muscular rheumatism has to be distinguished from fatigue and neuralgic pains. The muscular soreness resulting from over-exertion is transient in character, and follows so closely upon the exertion that the cause is apparent. Neuralgic pains are more shifting in character, sharper, and characterized by periods of relief. Torticollis is more rare and may be due to a variety of causes, many of them being reflex, from irritation of the spinal accessory nerve, from bony deformity, Potts' disease, pressure of enlarged glands, malaria, etc. In the form due to rheumatism, the reflex causes mentioned above can be excluded, the affection is more acute and painful, and is best relieved by salicylates. Subcutaneous nodules are said to be rare in this country but would be readily diagnosed if seen. They are small semi-solid bodies appearing along the extensor tendons of the fingers; at the knees or elbows. Erythema nodosum is quite rare, no case being seen in McConnell's 500 cases. I have seen one case, in a girl of 10 years. Notes taken at the time stated that "three days ago she noticed red, raised lumps on the front of both legs below knee and over the shins. Examination shows large flat papules, hyperemic and edematous. Redness extended beyond the raised part.

fading gradually. Temperature 100° F., pulse 124. Under salicylates, she improved and the lesions disappeared in about a week."

The importance of rheumatism, when affecting children, can not be too strongly emphasized. The practitioner should be on his guard and institute proper treatment at the earliest moment. Children should not be dismissed as suffering "only growing pains." The marked tendency of some children to frequent outbreaks in one form or another should be recognized. The treatment of the rheumatic child should aim above all to protect the heart and prevent subsequent valvular disease. The treatment of symptoms as such is of minor importance. Rest in bed is easily secured, during the painful stage of the disease, but should be insisted upon for a much longer period, at least several days after the subsidence of all symptoms. The medicinal treatment is simple and consists of large doses of sodium salicylate and sodium bicarbonate. The alkali I consider of equal importance with sodium salicylate. When given properly diluted, it is rare that they are not well taken. In a child subject to rheumatism, every care should be taken to guard against repeated attacks. Woolen underclothing and good shoes should be insisted upon, and unnecessary exposure prohibited. Exercise and bathing should be carefully regulated, so as to increase the natural powers of resistance. In these children, I always begin the administration of sodium salicylate on the least show of any such illness as a cold, grippe, or sore throat.

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HEMANGIOMA AND ITS TREATMENT.*

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CHICAGO.

Two years ago I read a paper before the Chicago Medical Society and exhibited a few cases treated by a new method, the subcutaneous spiral suture. The results obtained by this method were very superior to the results obtained by any other method I had used before. Since that time I have used the subcutaneous spiral suture on a considerable number of cases and I have satisfied myself that we can obtain almost ideal results with this method. In one of the last numbers of the *Centralblatt für Chirurgie*, Prof. Ali Krogius, of Helsingfors, publishes a new way of treatment of angioma by subcutaneous interlocking sutures, and in his article he quotes my method, saying that it has led to his way of treatment, but that he thought he could obtain equally good results by the interlocking suture. In the same journal Professor Payr, of Graz, publishes his results of treatment of angioma with magnesium tacks. A comparison of the results of these three different methods prompts me to publish my experience with my own, because I think that the subcutaneous spiral suture is superior to the others and because I did not make my method entirely clear in my previous publication.

*Read before the Surgical Section of the Illinois State Medical Society at Springfield, May 15-17, 1906.

Before I enter into a discussion of the technique, I must state that it is not applicable to every kind of hemangioma. An angioma of blood vessels may appear at different stages of life in different forms. In some of the cases the tumor develops in young children, beginning as a small winemark, which remains stationary and does not enter into the subcutaneous tissues. It is, in reality, not a tumor, but a simple hyperplasia of blood vessels. Some winemarks may grow slightly during the first year of life, or they may begin to grow at the age of puberty to a larger size; they may protrude slightly over the surface of the skin; they may be highly red or of a bluish, discolored tint, but all these varieties are really not tumors, but a hyperplastic condition of the vessels. In these cases the spiral suture is not applicable, but we treat them successfully with electricity. Another kind of angioma also begins as a small winemark, but shortly afterward, or again at the age of puberty, it grows above the level of the skin and into the subcutaneous tissue, forming a real tumor. The vessels themselves are pathologically changed, irregular in shape, disproportionate in size and intercommunicating by loss of the wall between them through pressure atrophy, forming what we call large blood caverns. The larger number of vessels are venous. This kind of tumor becomes very large, grows very rapidly and shows a tendency to malignancy. It destroys, by its pressure and growth, tissue as hard as bone or cartilage. This rapid growth is especially noticeable in infants and young children, and within a few months or even a few weeks a tumor of considerable size may grow out from a small winemark. They appear on any part of the body, but more frequently on the face, cheeks, within the mouth, on the tongue, etc. This tumor is pre-eminently fit for treatment with my method.

A third kind of angioma is one in which the arterial blood vessels prevail. This growth is characterized by pulsation, erectility, etc. It is also amenable to treatment with my method, but with a modification, namely, the preceding ligation of large supplying vessels, for instance, the carotid artery or the obturator artery.

A fourth class of angioma is one which, in reality, is a mixed tumor, involving, besides the blood vessels, a large amount of fat, connective or glandular tissue. In the treatment of these cases a great deal of surgical ingenuity and tact is required in order to obtain permanent results.

I admit that, in some instances, Krogius' method may be preferable, perhaps in the case of erectile angioma, but it would have to be tested first on a few cases.

My method of treatment is by no means entirely original in surgery, as the ligation had been used for the treatment of tumors a hundred years ago. One feature of it, however, is original, the removal of a tumor without much disfigurement. This is brought about by the use of a physiologic phenomenon in the treatment. We have to operate in many sittings on the same individual and exterminate the tumor mass gradually by diminishing its volume, and, while we are doing this, we enlarge the adjoining normal skin to the same extent, so that when the tumor has reached its smallest size the normal skin has grown to its largest extent,

and when the tumor has been reduced to a fibrous lump of scar tissue the skin is normal around the small lump, and when extirpated leaves hardly any scar. The method consists practically in this: Before any suture is employed we study in which direction the scar afterwards will run, as the constriction of the tumor must be done in such a manner that no ectropion or disfigurement by scar may occur. This will be better understood by an illustration. Suppose we have an individual case with an angioma of large size underneath the eyelid. The ultimate scar should run in the direction of the nasolabial fold. We have to enlarge the skin from side to side in order to prevent an eversion of the eyelid. This side-to-side traction must also be the traction of the spiral suture. The spiral suture must, therefore, pass from the nose toward the ear and from the ear toward the nose and back and forth in this direction. If we should, by mistake, make this spiral suture from the eyelid to lip and back and forth, we would not only not constrict the tissue, but we would draw up the lip and pull down the eyelid, leaving a very disagreeable condition, which we could not remedy very well afterward. Besides, the skin would not grow in that direction, up and down, because there is no tension between those two points. If we want to make an experiment in order to show that skin can grow between two points, we can satisfy ourselves easily in this manner. If we take a skin under fair tension, for instance, on the arm, and make two scars about five inches apart and then raise a fold between those two scars by a subcutaneous spiral suture, we may bring the distance of five inches down to three inches. If this fold remains persistent, some time later the skin will be farther apart, perhaps four inches, and, later on, about five inches. This shows clearly that the skin has grown fully two inches between the two scars. If we release the fold, by cutting the adherent tissue, which has been brought together by the spiral suture, the skin will atrophy to the original size so that the scars will be again, after a time, only five inches apart. We can notice such an enlargement of skin in pendulous tumors, which cause quite an enlargement of the skin through a traction produced by their weight. Upon removal of those tumors, the skin which has been so abundant gradually atrophies, through non-activity or non-irritation, to its original size. In my method of the subcutaneous spiral suture, I make use of this physiological growth of skin.

The spiral suture is commenced by passing the thread from one point of the periphery of the tumor underneath its base to the opposite side, then back and a little sideways under the surface of the skin, so that the needle comes out slightly to the side of the first puncture. This is drawn fairly tight and the thread is passed again through the same stitch, pole underneath the base, coming out at the opposite border somewhat to the side of the second puncture, going back again underneath the surface and so on until the whole tumor is enveloped in a spiral suture between the two most distant points. The suture is drawn as tight as possible, and, when the spiral is finished, the thread is carried back to the first point of entrance and the two ends of the thread are tied in such a manner that the knot is buried somewhat by the tension. The

thread is out of sight, as it is entirely buried. Since it does not cut off the circulation entirely, necrosis of the tumor or of the skin above does not occur. The points where the needle has pierced the skin are covered with collodion. Occasional measurements, between the sittings, have shown me that from suture to suture the tumor was diminishing in size and the skin increased in size in the same measure. Ultimately the tumor has been reduced to a fibrous nodule, which does not yield to any suture. Electrolysis might then be used to destroy it. In some cases, at least, this seemed feasible, but excision was much more simple and, with very fine stitching of the borders, the scar is noticed very little.

I will not go into the details of the history of the cases, as they are very much alike and one history reads very much like the others, but will take only one case as an example, the child of Mrs. B., of Seattle, 8 months old. When the child was born, it was perfectly normal, the face being without a blemish. Two weeks later a little spot was noticed underneath the outer corner of the right lower lid. This little spot increased to the size of a dime, when it became slightly prominent and of a grayish discoloration. The doctor who had the case in charge consulted one of the surgeons of Seattle, who, after two weeks of observation, advised an operation, because the tumor grew to three times its size in those two weeks. He made an elliptic excision and stitched the two borders of the skin. Primary union took place. Two weeks later, however, the scar spread slightly and small veins appeared within it. A bulging of the scar and a growth on the side a few days afterward alarmed the parents and they came to Chicago, where their parents resided. The grandparents of the child were neighbors of a family in which I had operated for an angioma of the nose, and this family referred the people to me. When I saw the child it was 8 months old. The tumor filled the larger part of the cheek, with a scar running on the surface of it, and was slightly pulsating. It was one of the angiomas which I have placed in the second class of the above division. I began with a spiral suture of the tumor. Within three months I made eleven subcutaneous sutures, with the result that a nodule of one-half inch in size of hard connective tissue remained. After excision of the nodule and fine coaptation of the borders, the result was ideal. One and one-half years have passed since the operation and there is hardly a perceptible scar under the eye.

Taking into consideration the simplicity of technique, the absolute safety of the method and the possibility of ambulatory operation, it seems to me that the subcutaneous ligature is preferable to the otherwise excellent method of Payr with magnesium tacks. The introduction of magnesium is something that needs watching. It requires the patient to stay in a hospital a long time, which is quite difficult in the case of infants. The other methods which have been advocated and which certainly give results, like the introduction of hot water, seem to me too risky in cases of tumors of any extent. I have now observed a sufficient number of cases to justify me in saying that the subcutaneous ligature in spiral shape is the best and least inconvenient method of treatment.

In cases of very large arterial, venous or mixed tumors, extirpation will have to be considered. During the last year I have had occasion to observe one of those monstrous angiomas in a young married lady, which had existed perhaps since birth. It had grown to an enormous size during childbirth. It was the second case of this kind I had seen in my practice. The first I described fourteen years ago, with Dr. Wagner, in the *Chicago Medical Recorder*. During confinement the tumor had burst, and the hemorrhage, which almost exsanguinated the patient, could not be stopped by packing, ligature or any other method except by continuous sutures of the tissues in different directions. This last case of angioma, observed during the last year, was of the size of a man's head, so that when the lady was standing up a large pulsating tumor hung down from one of her buttocks. It caused a great deal of pain. I concluded to remove the tumor. The lady entered the Michael Reese Hospital and, with the kind assistance and help of Dr. Lester Frankenthal, in whose care the lady was previous to and after confinement, I operated on her about a year ago. I was surprised that the tumor had not interfered with the confinement, and I think that it must have been extremely difficult and taxed the skill of the obstetrician to prevent a hemorrhage during confinement, which certainly would have proved fatal. Our operation consisted in a flap incision, extending from the coccyx to the outer crista ilei. After the flap had been dissected back I ligated every bleeding vessel and worked my way along the angioma toward the pedicle. Notwithstanding forceps and an enormous number of ligatures, constant bleeding could not be prevented, so that when I had worked my way toward the pedicle in the region of the pyriform muscles in the incisura ischiadica, I had to place a ligature *en masse*.

The patient was returned to bed almost pulseless, and only through the very energetic and careful treatment of Dr. Frankenthal were we able to resuscitate her sufficiently to obtain a pulse. During the first twenty-four hours, her condition was critical. The anemia was extreme, but during the next eight days she gained rapidly, when, during a change of dressings, a profuse secondary hemorrhage took place. An interne was called and within a few minutes such a hemorrhage had taken place that the lady was brought again nearly to a point of danger. The interne packed the wound through the opening left for a drainage tube and stopped the bleeding. At the end of two weeks another secondary hemorrhage took place, which necessitated the rapid reopening of the cavity and suturing of one of the bleeding arteries. Then the wound was treated openly and ultimately healed. This case illustrates the treatment of the third and fourth class of angioma—the angioma arteriale.

DISCUSSION.

Dr. A. E. Halstead, of Chicago:—In regard to the treatment advocated by Dr. Beck, I have had cases of angioma of the cheek, some of which were treated with spiral suture. The patients made a good recovery without deformity. I wish to mention a class of angiomas that are not to be treated by this method, and I refer to those angiomas that occur on the inside of the cheek. I recall one case I had recently, where attempts were made in the case of a small girl to excise the angi-

oma, which occupied the inner side of the cheek. The tumor was the size of a man's fist and protruded from the mouth. It was partly removed by a surgeon a year ago, but recurred and grew larger than it was at first. It seemed impossible to excise the tumor without greatly disfiguring the face, and it was impracticable to use the spiral suture because of the situation. Accordingly I adopted the plan recommended by Wyeth, namely, the injection of boiling water, and had a very gratifying result. The patient's face became swollen after the injection of the water, but the swelling subsided inside of a week and the patient left the hospital at the end of two weeks without any trace of the angioma. The cicatrix was not larger than the end of the thumb. The tumor originally was larger than a fist. For these cases, where the ligature is not applicable, I can strongly recommend this treatment of Wyeth's. The technic is simple. You can use any kind of syringe. The syringe I used was one that is employed for antitoxin, and it is only necessary to keep the water boiling and inject it into the tumor. Following the operation there is no pain or sloughing and the cure is complete. When the tumor is venous and communicates with a large vein, preliminary ligation of the vein will prevent a possible embolism.

Dr. Charles J. Drueck, of Chicago:—Dr. Beck, in closing his remarks, stated that the thread has disappeared. I was wondering whether he used silk and had to cut it out afterward or whether he used catgut. I would like to know which material he used.

Dr. E. Mammen, of Bloomington:—I would like to ask Dr. Beck what kind of material he uses for that purpose.

Dr. J. F. Percy, of Galesburg:—I am interested in this paper and particularly in the first case Dr. Beck has mentioned. We all know what distressing cases they are. When a young woman wants a mark of the greater degree of angioma removed from her face we are usually up against a very difficult proposition in attempting to select the best method.

I hope I am not out of order in mentioning the fact that I have used, in a number of cases, the method whereby the blood is coagulated in the capillaries by spraying superheated air over the affected surface. The apparatus used is that of Holinger, with which he first began the treatment of lupus. This is merely a Bunsen burner with a coiled tube, at one end of which is a nozzle and at the other a rubber bulb, such as you use on the Paquelin cautery. Under chloroform anesthesia superheated air is sprayed over the affected area. It produces a burn of the first degree. You keep applying it until the tissues acquire a sickly yellow hue. I have had some gratifying results by this method, but no complete cures, mainly because the patients are so improved that they think a cure has been effected. They tell me they notice that people do not look at them any more on the street, and that is such a relief to them that they get tired of repeated anesthetics. I have had one case that I have anesthetized four times, and it seems in many of the cases the capillaries get larger as we go deeper in these so-called cases of port-wine marks.

I am gratified to know of this method in this second class of cases.

Dr. Beck (closing the discussion):—The suture material used was catgut. At first we employed silver wire, but afterward it was found that catgut was the best material, and it disappeared within ten or twelve days entirely from the tumor and left the tumor in a retracted condition.

So far as the first class of tumors referred to by Dr. Percy is concerned, I have treated them with the hot-air treatment, and it produces a surface-burning and cicatrization which is not very regular, and on top of the cicatrix there appear again small veins. We have a different apparatus, consisting of a syringe in which there is an electric bulb, which gives usually good results; you have got to have quite a high temperature to compress the air passing over the electric bulb. The results are not as good as with the treatment by electrolysis. The latter has the disadvantage, in that you have to anesthetize a patient ten or twenty times to remove the small marks. In angioma of the nose these methods have given variable results, with a small amount of scar and very little disfigurement. The

treatment is simple. One electrode is applied to the cheek and the other to the tumor, and then with a little gas foaming up it shows that we have enough destruction of the tissue. And this I repeat at different points, say a distance of from one-tenth to one-quarter of an inch, and at different times until we have destroyed the larger vessels.

The treatment with hot water, referred to by Dr. Halstead, has also proven successful, but not as successful as in the case cited by Dr. Halstead of surface angioma, because I have had extensive gangrene following it. I do not know why it should have occurred in this case. I had another case of surface angioma in which there was produced gangrene in the mouth. The result was very good, but there was quite a retraction, so that the movement of the jaw was interfered with.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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OCTOBER, 1906.

ILLINOIS MEDICAL COLLEGES AND THEIR STANDING.

The following correspondence, published in *The Journal* of the American Medical Association for September 29, is of so much interest to the profession in the state, and especially to the members of our State and County Societies, that we reprint Dr. Egan's letter in full, as well as the comments of the editor of *The Journal*. In the interests of medical education and the advancement of the profession, no efforts should be spared to insure a correct understanding of the tables and reports of the Council on Medical Education and the inference to be drawn from them, regarding medical colleges in Illinois.

STATE BOARD RESULTS IN THE EDUCATIONAL NUMBER.

SPRINGFIELD, ILL., Sept. 17, 1906.

To the Editor:—Please allow me space to dwell further on the erroneous conceptions which may be gained by the casual reader through a mis-interpretation of the significance of the data in the educational number of *The Journal*, August 25.

I have now before me a printed postal card which I believe has been sent broadcast, bearing the bold-faced caption, "Failures of Chicago Graduates," and giving a list of the different medical colleges of Chicago with the percentages of failures of their students before the "different state medical examining boards throughout the United States during the year 1905." *The Journal*, Aug. 25, 1906, is quoted as the authority for the figures.

This card shows the National Medical University as the Chicago medical college established over five years having the smallest percentage of failures, with

the Northwestern University Medical School and Rush Medical College in the second and third place, respectively. The reader, conversant with the standing of the two older colleges, among the medical institutions of the state, is at first skeptical, but on referring to your educational number (Table A) he finds that the author of this card is fully supported by your figures, and was guilty of no misrepresentation when he quoted *The Journal* as his authority.

This incident illustrates forcefully the danger of the publication of deductions drawn from data whose figures are not uniform in significance. To the vast majority of the readers of *The Journal* to whose attention this card may come, the statements on the card are fully substantiated by reference to your Table A, and they will not take the trouble to go further to ascertain the exact facts. We have here, in short, a very widely promulgated misconception, for which *The Journal* is unfortunately made to stand sponsor.

It is true, as you have said, that your readers were cautioned, in the editorial accompanying these data, to consider the conditions surrounding their origin, but it is my impression that a very large percentage of those who glanced over the deductions of your tables paid little or no attention to their discussion and explanation. The average reader is prone to accept conclusions, especially when based on figures, with little concern as to their source.

On an analysis of your figures we find that the National Medical University, the school credited with the highest standing, had 24 applicants who appeared before but 7 examining boards. One of these applicants failed to pass an examination. Northwestern University Medical School had 191 applicants before 27 boards, and 10 of these failed to pass an examination. Rush Medical College had 254 applicants before 30 boards, and 21 failed to pass an examination.

Of the failures of Northwestern 6 were before boards which rejected from 25 to 50 per cent. of all applicants from other states. Of the failures of Rush Medical College 10 were before boards rejecting 25 per cent. or more of applicants from other states. The National had but 1 graduate before any board which rejected more than 25 per cent. of applicants, and that one failed.

As I said in my communication in *The Journal*, September 15, "we might as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination."

It is obvious that percentages drawn from the successes and failures of the National Medical University and the other two institutions are in no way comparable. I am not prepared to say what success the graduates of the school given highest place would have attained before a larger number of boards, but for 1905 the percentage is based on results before an insufficient number to give an adequate idea of the standing of any school. Still *The Journal*, through the publication of these deductions and percentages, is compelled to stand sponsor for statements which are very widely promulgated and used to influence the young men of the country in the selection of the place for their medical education.

JAMES A. EGAN,

Secretary, Illinois State Board of Health.

EDITOR'S NOTE: Our correspondent refers to a postal card which, although anonymous, leaves little doubt as to its source. It is to be noted how skilfully its author, by the use of the words "colleges established five years or more," omitted one college, an evening school, which happened to have a still lower percentage, by reason of having had only one graduate examined outside of Illinois, and he failing. A college that had received, in an exceptional year, and often from a combination of circumstances, an unusually low percentage of failures could hardly be blamed for taking advantage of it, since another opportunity might never occur. That it should send out anonymous statements, for the purpose of conveying a wrong impression, as the cards referred to doubtless were sent out, only adds to the suspicion with which at least one Chicago college is regarded. This suspicion our correspondent seems to share. If the suspicion is not well founded, why is it not

as fair for one college to be shown up as having received a low percentage as another? As to the figures being insufficient, the college had 29 graduates, 24 of whom took the examination. This would seem to be a large enough proportion for a fair basis for figuring the percentage.

The statistics published are uniform except in degree in which they never could be uniform, and therefore could never be strictly "uniform in significance." Because a casual reader may form a wrong conclusion or because a college so inclined may publish half-truths for selfish purposes, are not good reasons for withholding from publication statistics which are of absolute value to the careful reader.

While there are bound to be differences between the percentages of the same college from year to year, each year hereafter will furnish larger totals from which to make deductions and then the deductions, of course, will have added value. For the past three years the figures for Chicago colleges are as shown in the accompanying table. It will be noted that the college which appears first on the anonymous postal card takes a back seat at this table.

TABLE SHOWING RESULTS OBTAINED BY GRADUATES OF CHICAGO COLLEGES IN EXAMINATIONS BY STATE EXAMINING BOARDS HELD DURING THE YEARS 1903, 1904 AND 1905.

Chicago Colleges.	Examined in all States.				Examined in Illinois.				Examined in Other States.				No. of States Examining.
	Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	
Northwestern Univ. Med. School...	477	460	17	3.6	217	217	0	0.	260	243	17	6.5	29
Rush Medical College	784	732	52	6.6	359	357	2	0.6	425	375	50	11.8	29
Coll. of Physicians and Surgeons...	790	729	61	7.7	450	447	3	0.7	340	282	58	17.1	31
Hering Medical College	55	50	5	9.0	30	29	1	3.3	25	21	4	16.0	17
American Med. Missionary College ..	48	43	5	10.4	11	11	0	0.	37	32	5	13.5	20
Hahnemann Medical College	204	182	22	10.7	132	129	3	2.3	72	53	19	26.4	23
American Coll. of Med. and Surg...	77	65	12	15.6	60	55	5	8.3	17	10	7	41.2	9
Jenner Med. Coll.	54	44	10	18.5	49	42	7	14.3	5	2	3	60.0	5
Bennett Medical College	77	62	15	19.5	45	43	2	4.4	32	19	13	40.6	17
National Med. University	65	51	14	21.5	49	39	10	20.4	16	12	4	25.0	9
Illinois Med. College	164	121	43	26.2	69	61	8	11.6	95	60	35	36.8	32
College of Medicine and Surgery...	63	39	24	38.1	52	36	16	30.8	11	3	8	72.7	8
Dearborn Med. Coll.*	47	46	1	3.4	46	46	0	0.	1	0	1	100.0	2
Totals.....	2905	2624	281	9.7	1569	1512	57	3.7	1336	1112	224	16.7	

* Unclassified, since figures are for two years only, and all but one were examined in Illinois.

THE PASSING OF DOWIE.

John Alexander Dowie, some time First Apostle of Zion and the most successful religious fraud of the present time, has gone the way of all such adventurers and has been forced to leave the organization which he so skilfully built up during the past fifteen years. One of Dowie's strong points was his abuse of the medical profession, and yet, according to recent statements, he has been obliged to avail himself of medical aid in his efforts to keep alive. It seems probable that the city which Dowie founded will rapidly disintegrate and that another ten years will find Dowie simply a reminiscence. In the mean time, we wonder what form of religious fraud will next appear.

STATE HOME FOR EPILEPTICS.

According to a recent report, the State Board of Public Charities is about to undertake the important duty of providing a suitable home for the numerous epileptics of the State of Illinois. At the October meeting, the matter of converting the Soldiers' Orphan Home at Normal into a state hospital for epileptics will be considered and a bill prepared for the introduction to the Legislature next January.

There are only about three hundred orphans at the institution and the plan is to transfer them to the Soldiers' Home at Quincy. The probability is that if this is done the number of soldiers' orphans seeking assistance from the state will rapidly diminish. The Civil War having ended more than forty years ago and all dependent soldiers and soldiers' orphans having been amply provided for by the government, it would seem that there is little excuse for the further continuance of a soldiers' orphans' home. Certainly there is no such necessity for an institution of this sort as there is for a proper provision of the one hundred epileptics in the state.

The State Board of Charities having taken the initiative in this matter, it is to be hoped that all physicians will lend their influence to complete the plan as outlined, especially since all children at Normal can be as well cared for at Quincy.

A MODEL DOCTOR'S WIFE.

Last month there died, in a distant Ohio city, a woman of the past generation, whose virtues should be told as a model, for the present and future generations, of that heroic class known as doctors' wives. This lady, Mrs. Dr. G. W. Fringer, formerly of Pana, Illinois, represents an ideal of what a doctor's wife should be. Her self-sacrifice is more to be admired when it is recalled that she lived and performed her duty at a time when furnaces and steam plants to heat houses during the middle hours of the night were unknown and there were no gas or gasoline stoves to lighten the burden of her labors.

Not only did Mrs. Fringer provide for her husband during the day, but it is said that he never was called out at night that she did not arise also and see that he was properly clothed and equipped for the trip, and many times she accompanied him with a lantern to lighten the dark road and give an encouraging word to cheer him on his way. If she did not go with him, she awaited his return and prepared a warm lunch for his refreshment.

The devotion of the doctor and his wife to each other, as may be imagined, was ideal and a great pleasure to those who had the privilege of entering their household. A few years since Dr. Fringer was called home, where he, no doubt, awaits the coming of the faithful companion of his labors on earth.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular meeting of the Adams County Medical Society was held Monday, September 10, at the Elks Club, in Quincy, with President Grimes in the chair. Those present were Drs. Ashton, Beirne, Besker, Bates, Christie, Ericson, Grimes, Hart, Hinton, Kosh, Knox, Montgomery, Nickerson, Pittman, Robbins, Rice, Rosenthal, Schullian, Shango, J. B., Shango, K., Walker and Williams, W. W. The applications of R. T. Hinton, O. F. Schullian and A. S. Stocks were read. The following were elected to membership: W. A. Garner, Clayton, Thos. R. Whray, Golden, A. E. Kidd and J. F. Roach of Quincy.

The subject for discussion was summer diarrheas in adults and children. This was opened by Dr. Knox and participated in by Drs. Becker, Beirne, Hinton, Nickerson, Montgomery, Schullian and Williams. It was the general opinion that, after an initial calomel or castor-oil purge, the treatment should consist of the restriction or withdrawal of food, giving of boiled water, and irrigations of the large bowel with normal saline, at a high temperature. In cases of prostration, hypodermoclysis should be given. The astringents, zinc sulphocarbolate, the salts of bismuth, tanalbin, alone or in combination with minute doses of opium were advocated. In the cases of cholera morbus, which forms about 2 per cent. of the summer diarrheas, the first indication is to overcome the collapse. Dr. Hinton spoke of the remarkable efficacy of Heubner's method of infant feeding in the diarrheas of infants, after the initial calomel purge and hypodermoclysis. Dr. Ashton related some of the events of interest at the Toronto meeting of the British Medical Association, which he attended. The attendance was 2,200; of this number 50 per cent. were Canadians and American visitors. The recognition accorded Dr. W. J. Mayo was most complimentary to him and to the American profession. His paper was on the subject of "Duodenal Ulcer," and he was given additional time for its reading by the chairman, Sir Hester Cameron, on account of the excellence of his paper and because of the general interest manifested. Adjourned.

GEO. E. ROSENTHAL, *Secretary*.

COOK COUNTY.

CHICAGO OPHTHALMOLOGICAL SOCIETY.

Meeting, March 13, 1906.

DR. GEORGE F. FISKE, President.

PECULIAR EXPERIENCE WITH DIONIN.

Dr. Suker reported the following case: As the result of the explosion of a percussion cap, a young man, aged 21, developed a sero-plastic iridocyclitis. In order to get as much dilatation as possible, dionin in powder form was used. Contrary to expectation an excessive myosis developed. The pupillary opening was scarcely visible, and, even under the use of atropin, it was several hours before a pinhole dilatation could be secured. Two days later, after all irritation had subsided, iridectomy was performed, and it was found that even in this short time, attachment of the posterior surface of the iris to the anterior capsule of the lens had taken place. No similar case is recorded in the literature. The question arises whether the myosis was the result of an idiosyncrasy on the part of the patient, or due to the impurities in the preparation of the drug from morphin. To determine this the same powder was used on another patient who had iridocyclitis, without producing any unusual effect.

Dr. Faith had seen this case with Dr. Suker, and also another case of mild uveitis, no iritis, in which the dionin caused a marked myosis; the patient was under atropin and the pupils were widely dilated. The physician who had the case under his care tried it again with the same result.

In reply to Dr. Pusey's question Dr. Suker stated that the tension was not altered, either before or after the use of the dionin.

Dr. Dodd had seen slight myosis in several cases following the use of dionin.

Dr. Loring stated that he had inadvertently put one drop of 5 per cent. solution of dionin in each eye of a 12-year-old boy, whose pupils were fully dilated from several days' use of atropin. Fifteen minutes later the pupils were contracted to about 3 mm., and so remained for about an hour, when they began to dilate slowly; in half an hour more they had attained their normal size. (The boy had a marked central chorioiditis and nystagmus, with a high refractive error.) He used the same solution in two or three other cases, with the usual result. The vision was not altered sufficiently to produce a chemosis.

Dr. Colburn cited two cases under observation; in the one he used dionin with the usual result, but in the other no chemosis followed. Thinking that he might have been careless in instilling the drops, he repeated the procedure, but still no effect was observed. In both cases, however, he noticed that in from twenty minutes to half an hour after the use of the dionin, the pupils were contracted. No atropin was used in either of the cases.

In closing, Dr. Suker stated his preference for dionin in powder form and cautioned against impurities which the drugs may contain.

LOCAL DEPLETION IN THE TREATMENT OF THE TRACHOMATOUS CONJUNCTIVA.

Dr. Nils Remmen believes that the roller forceps and strong astringents only irritate a part, which should be left alone; one should evacuate the follicle and deplete the tissue with the least possible increase of blood supply to the conjunctiva. With this in view he uses the sharpened edge of a toothpick to scrape open and evacuate the follicle and exsanguinate the diseased area and then applies bichlorid of mercury, 1/5,000, to the exposed surface. Prompt cure has followed in a number of cases which resisted the more violent form of treatment.

DISCUSSION.

Dr. Fiske stated that he has not used silver or copper in the treatment of trachoma for fifteen years. Instead of the toothpick he uses a cataract knife to scarify. His results have been much better than with the use of the blue-stone.

Dr. Young said that he did not think that strong astringents could be discarded entirely; in fact, he thought that sometimes they are not used in sufficient strength.

DIABETIC RETINITIS.

Dr. W. E. Gamble exhibited and reported the following case: F. P., age 35, R. and L. V. 3/200; examination of the fundus revealed white, highly refractile, widely scattered, punctate areas of degeneration, with a few almost imperceptible hemorrhages throughout the posterior segment of the retina of each eye; the retina between the affected areas was perfectly clear. No history or evidence of syphilis could be found. The urinalysis showed 3,750 e.c. to have been passed in twenty-four hours, a specific gravity of 1,031 and 1.67 per cent. of sugar; no albumen or casts were found, subsequent urinalyses showed 2 and 3 per cent. of sugar respectively. Despite the increase in the amount of sugar the vision had improved to 12/200 after six weeks of observation; the areas in the retina have improved somewhat.

The case falls into Class 1 of Hirschberg's classification, namely, central punctate diabetic retinitis, rather than into Class 2, in which only hemorrhages are present. Other things being equal, the prognosis should be more grave in the hemorrhagic type than in the form without hemorrhages. The areas in the degeneration in the author's case differ in no way from those found in albuminurie retinitis outside the macula.

The prognostic significance of retinitis in diabetes has recently been discussed by Nettleship. He bases his conclusions on 43 cases. The patients ranged from 41 to 79 years; 38 were known to have died—9 in the first year, 11 in the second, 18 between 2 and 8 years after the discovery of the retinitis; 10 were known to have been living 2 years after such discovery, 6 at periods of from 6 to 10 years after. The prognosis as to duration of life, therefore, differs widely from that of albuminuric retinitis, since two-thirds of the patients were living two years after the retinal lesion was observed.

DISCUSSION.

Dr. Dodd referred to three cases of diabetic retinitis in his own experience, one of which returned after four years with improved general health and vision, although the spots in the retina were still present.

Dr. Suker asked whether the vascular tension had been taken. Diabetes is a toxemia, and all toxemias increase the blood pressure, either locally or generally. Prior to the specific lesions appearing in the retina there is always to be seen a retinal haze, the result of the increased peripheral tension; the higher the blood pressure the more apt are hemorrhages to occur, and vice versa. The acme of the fundus findings is in consonance with the tension.

If the tension is low the condition is apt to be of the inflammatory type; if the tension is high, hemorrhages will in all likelihood take place. He has examined quite a few of these cases with Dr. Elliott and in a number of instances has been able to state the condition of the patient from a study of the fundus alone. In all these cases either sugar or albumen was subsequently found. He considers the question of the vascular tension a most important one in the prognosis of the case and urges that it be determined in every instance.

Dr. E. V. L. Brown referred to a case which is an exception to these rules laid down by Dr. Suker. The case is one of bilateral detachment of the retina in a nephritic with thrombosis of the choroidal vessels. The blood pressure is 210, and yet there are but three hemorrhages in the two fundi.

Dr. Wilder also cited a case of retinitis in chronic nephritis with arteriosclerosis, in which there are but two or three hemorrhages, although the blood pressure is 240. There is in this case a marked papillitis, such as is often seen in brain tumor and gumma; the patient is totally blind, except for the central vision which often persists to the end.

Dr. Suker said that active congestion is more apt to be found with high tension, and passive congestion with low tension; hemorrhages may occur in either condition, but they are more likely to occur with high tension. The high tension in arteriosclerosis necessarily leads to nephritis. If there is a cardiac lesion, a valvular lesion associated with the high tension compensation will minimize the congestion.

Dr. Gamble stated that the blood pressure was not taken in his case; the arteries were not hard nor did they indicate a high vascular tension, and the absence of haziness between the spots in the retina would speak against it.

HYALIN DEGENERATION OF THE CONJUNCTIVA.

Dr. Wilder presented a patient, a man, aged 50, who has had sore eyes for six years or more. The trouble began in the right eye, with a growth at the inner canthus. Two years ago a similar growth appeared in the left eye, and now it has formed the condition of symblepharon. The growth has almost covered the cornea of the right eye so that vision is very much reduced.

The growth looks like an epithelioma, and palpation would tend to confirm this impression. A microscopic section was made of a small portion of the tumor. There is beneath the conjunctival layer of the epithelium a proliferation of the lymph vessels, and in the connective tissue reticulum there are seen lymph vessels the walls of which are thickened and have undergone hyaline degeneration. In all probability the case is one of hyaline degeneration of the conjunctiva, a condition which frequently follows trachoma.

He has seen two other cases of hyaline degeneration coming on after trachoma. Both patients were Jews from eastern Europe. The treatment is operative. It will be necessary to excise the mass and do a plastic operation on the lid.

Dr. Dodd stated that he had a case which seemed to be very similar to Dr. Wilder's. The entire cornea was covered with the growth. The conjunctiva was very much thickened on all sides in both the upper and lower cul-de-sac. The eyeball was fixed. He removed the growth as carefully as possible and made a large skin graft so as to form a new cul-de-sac both above and below. Finally he was forced to operate again at the inner canthus. What was left of the conjunctiva began to proliferate, and gave much trouble. The cornea became opaque, and it is now thickened and steamy, and the patient complains continually of the irritation. The eyeball has retained good movement, however.

Dr. E. V. L. Brown exhibited cases of keratitis profunda and iritis gonorrhœica.

Meeting, April 10, 1906.

The regular monthly meeting of the society was held in Booth Hall, Northwestern University Building, Tuesday evening, April 10, 1906, with the president, Dr. George F. Fiske, in the chair.

CARDIOTHYROID EXOPHTHALMUS.

Dr. G. F. Suker: This man, negro, aged 35, has an excessive myopia, and a very wide pupillary distance, therefore modifying markedly the Moebius sign, which I think is purely a mechanical one that has nothing to do with the disease itself. The von Graefe sign is not perfect; he has, however, a uniform lagging of the lid. Last October, when first seen, he complained of blurred vision in the right eye and failing vision in the left eye. On examination I found that he had rather a profuse intraocular hemorrhage, which was absorbed after a time, although the fundus of the left eye remained indistinct and clouded for some time. His pulse was 140, and arterial tension 150, 160, 170 and at one time 200. The patient was put to bed and given thyroidectin under which both his general condition and vision rapidly improved. His vision now is 20/50 and the fundus practically clear; his pulse is 110, and the vascular tension 120 to 130. I begin to look on this hemorrhage as the result of high arterial tension. As the circulatory stagnation and peripheral resistance diminished, the fundi cleared up and he improved generally. Dr. Elliott has collected fifty or sixty of these cases, in all of which the tension was above 130, the maximum being something over 200. All the patients had eye symptoms, and all had blurred vision. My patient, after he got out of bed, went back to work. His pulse and tension immediately went up and his vision began to drop. He was put to bed and again he immediately improved. Here, as in the case I referred to at the last meeting, the arterial tension gives the key to the situation. The retinal arteries are among the first to suffer from high tension because they are end arteries.

A NEW TRANSILLUMINATING APPARATUS.

Dr. H. V. Würdemann:—The transilluminator devised is a modification of the DeZeng ophthalmoscope. The entire instrument is not much larger than a fountain pen, and may be handled in the same manner. The small electric globe in the ophthalmoscope is replaced by another of the same size on the end of which there is a lens. The cone-shaped screw cap of the instrument contains a glass rod about three-fourths of an inch in length, which comes in contact with the end of the lens. Nearly all the light is thus focused in the glass rod, and is brought out through it to the tip of the instrument and from there a beam of light is projected through the eye or the structures to be illuminated.

The instrument is also efficient for illuminating the frontal and ethmoidal sinuses. The cost of the instrument is about \$5. It is of great service in differentiating intraocular tumor from pus in the eye and other conditions that may be mistaken for tumor.

HYPERPHORIA.

Dr. J. E. Colburn reported a case of hyperphoria of 9 per cent., with limitation of upward motion of the fellow eye amounting to 10 per cent.; an advance-

ment of the superior rectus of the first eye and two subsequent tenotomies of the corresponding muscle of the fellow eye gave only temporary relief. Exploration of the inferior rectus tendon of the second eye then revealed a broad adventitious band, $\frac{2}{3}$ the size of the head of the tendon, limiting the motion of the eye upward. Eighteen months have elapsed since the excision of this band and orthophoria has been secured, along with the cessation of all the symptoms. Following the first operation astigmatism of 5 D. axis 90 developed; this has gradually decreased since the last operation and is now only a little more than 3 D.

DISCUSSION.

Dr. H. V. Würdemann:—The experience is so unusual that I can scarcely discuss the operation or the condition of the muscles. It is certain that, after an advancement, we do find some astigmatism, but I have never known the condition to become permanent after an operation on the ocular muscles.

Dr. J. B. Loring:—The tripometer should have been of value in determining the ability of the eye to rotate in this case; upward rotation would have been defective.

Dr. Colburn, closing the discussion:—The astigmatism in this case increased each time I advanced the muscle, and up to about the same degree. It then slowly decreased, and increased again with the next operation, and so on. After the last operation the astigmatism dropped 2.5 D. almost immediately.

As to a permanent change in the astigmatism following operations on the muscles, I have frequently seen astigmatisms increased and decreased following operations for tropias and phorias, changing up to 1 D. or 1.5 D. I stated in my paper that the rotation upward was 10 degrees less than the rotation of the fellow eye: I have seen that occur in a weak or insufficient muscle.

THE DIPLOBACILLUS OF MORAX-AXENFELD.

Dr. Brown Pusey reported ten cases of infection of the eye with the diplobacillus of Morax-Axenfeld observed in Chicago during the last six months. Five of these cases were cases of chronic conjunctivitis, in one of which there had been marginal ulcers of the cornea; three were cases of acute conjunctivitis; one was a severe ulcer of the cornea, and in one case there were no objective or subjective symptoms.

These being the first cases recorded in Chicago, of infection by this organism, Dr. Pusey reported the clinical histories of his cases in some detail, and spoke of the characteristics of the organism and exhibited smears and cultures of it. From his experience he concludes that the Morax-Axenfeld bacillus is more widespread in this region than has been supposed.

DISCUSSION.

Dr. N. M. Harris called attention to the tendency to specialization in bacteriology, and quoted the dictum of Eyre that the diagnosis of inflammations of the eye should not rest so much on the clinical findings as on the bacteriology of the exudates. For not only is the number of organisms causing specific inflammations of the eye relatively small and their cultural reactions easily determined, but their morphological differences well marked as well. The organism under discussion is best called, by Eyre, the *Bacillus lacunatus*, because of its peculiar habit of forming holes or lacunæ on coagulated blood serum. It is very similar to, and perhaps the same organism, as that described by Pettit as growing on ordinary media and liquefying gelatin; indeed Axenfeld and Eyre both have found that subcultures of the *B. lacunatus* may acquire these characteristics.

Dr. F. A. Phillips exhibited a probable case of this form of conjunctivitis. It has not yet responded to the cultural tests, but the microscope has demonstrated the presence of the bacillus on two occasions. When first seen there was a very marked erosion of the lids at the inner and outer canthus. The secretion was scanty and light in color. The patient has had the condition for over a year. Simple antiseptic treatment has been instituted until cultures of the organism shall have confirmed the clinical diagnosis.

In the case of an infant seen some months ago a serious ophthalmia was suspected, but the microscope showed the presence of the diplobacillus, although no cultures were made. Active treatment was instituted with good results.

Dr. H. V. Würdemann:—Dr. Pusey's paper points out the necessity of making office examinations of the secretions from the conjunctiva. The diagnosis is made easily and the treatment is outlined positively in each instance, whether the case is one of diplobacillary conjunctivitis or gonococcus or streptococcus conjunctivitis. If there is any doubt, the services of a bacteriologist can be secured or a blood serum tube may be inoculated and sent to the bacteriologist for diagnosis. The silver salts are specific for the gonococcus and the zinc compounds are specific for the Morax-Axenfeld diplobacillus.

He cited the case of a boy who had been treated for an acute purulent conjunctivitis for over a week; he was convinced that gonorrheal infection was entirely out of the question, and a microscopical examination of the secretion at once demonstrated the presence of the diplobacillus. No other germs were found. Sulphate of zinc cured the case in three days. A few days later the father came with the same condition. The smears showed the diplobacillus, and sulphate of zinc produced prompt results.

Dr. W. E. Gamble cited the case of a boy seen about a month ago who had an acute conjunctivitis in the right eye, without much discharge. A smear was made and it showed the diplobacillus. Proper treatment was instituted, after having used argyrol without effect, and the eye got well.

Another case of ulcer of the cornea was treated for months, and yet the eye is no better. Argyrol and boric acid solution proved ineffective. An optical iridectomy was done, but the operation was not very successful. Smears were not made in this case, except early in the disease.

He has recently seen four cases of acute conjunctivitis in which the ocular conjunctival injection was quite marked. The microscope showed the diplobacillus, so that the picture need not necessarily be of the chronic type. The disease may be acute in character. However, that may be due to a mixed infection.

Dr. E. V. L. Brown said that it is possible to make a diagnosis of this condition in many cases from the clinical features alone. A mixed infection may, however, change the picture of a chronic disease into that of an acute affection. In the case cited by Dr. Phillips two other organisms were found, a staphylococcus and another diplococcus.

He has observed in the laboratory that zinc sulphate is not a specific for this form of conjunctivitis, as has been claimed. Some patients have been under treatment for two or three months, although it may be possible that they are not observing the instructions given by the physician as closely as is the case with a private patient. But in all these cases the diplobacillus is still present in the secretions.

Dr. Pusey stated that in all his cases after using the zinc the results were apparent immediately; but all his patients were private patients, except two who were in a hospital, and even over these he had absolute control, and as Dr. Brown stated, he thought that this might make some difference in the results obtained from treatment.

As to the nomenclature of the bacillus, he protested at the bacteriologist taking away the little credit the ophthalmologist has earned in this connection, because Morax and Axenfeld are ophthalmologists, and, therefore, it is well to have their names connected with the organism.

Meeting, May 8, 1906.

DIONIN IN OLD CORNEAL OPACITIES.—DRS. C. W. HAWLEY AND M. Z. ALBRO.

The writers reported four cases of old corneal opacities and infiltrates, markedly cleared by long continued use of 2 to 10 per cent. solution of dionin.

Cases 1 and 2.—Mother and son, respectively, had 5 mm. and larger, prominent, white opacities; only one small opaque point at the present time can be seen in the boy's cornea, and one must use a lens to discover the infiltrate whatever in the mother's cornea.

Case 3 had a very dense 2x3 mm. scar, evidently due to extensive ulceration, and a narrow band of infiltration in addition to general opacity almost entirely hiding the iris; under treatment a 3 mm. clear marginal zone has appeared through which the iris is plainly visible and the denser scars much smaller and thinner.

Case 4 is a leucoma existing from childhood, and is gradually disappearing under treatment.

DISCUSSION.

Dr. Oscar Dodd compared the results to be obtained from the use of dionin in one eye and jequiritol in the other. In his experience, the latter gives the better results in inflammatory conditions and the former in the non-inflamed opacities, although dionin seems to work the better in mild inflammatory conditions. In opacities due to corneal ulceration, he has obtained very little benefit from jequiritol.

Dr. W. E. Coleman has found that the eye becomes tolerant to dionin after 5 or more days of use; galvanization before its use increases its effectiveness. He used this treatment in an acute case of iridocyclitis, with rapid clearing of the cornea.

In the case of a child six months old, whose cornea was injured during a forceps delivery, he used dionin faithfully for six months without any effect whatever.

Dr. Hawley had obtained no favorable results in these cases, either from the use of yellow oxid of mercury and massage, or electricity; his results had been obtained exclusively with dionin.

Dr. J. Elliott Colburn reported the case of a woman, aged 32, who had a large central opacity following ulcer of the cornea that occurred during an attack of smallpox when the patient was six years of age. It was quite dense, but the curvature of the cornea was symmetrical. He used dionin for about two months without any perceptible clearing of the cornea. Having read in some journal that the cornea would clear more rapidly when the opacity is somewhat recent, it occurred to him that he might create a more recent condition, so he applied electrolysis, searing the entire surface of the corneal scar. After the condition had passed the acute stage, he used dionin with the result that the patient acquired about 20/40 vision within four or five months.

Dr. F. E. Brawley:—"Affection of the Frontal Sinus and Anterior Ethmoidal Cells Manifesting Purely Ocular Symptoms." (Membership Thesis.) The writer gave a detailed report of 8 cases in point, along with a résumé of the literature; headaches beginning about the eye, and accompanied by inability to use the eye during the attack, are practically always of nasal origin, involving the frontal and ethmoidal sinuses, and usually non-suppurative in type.

2. The condition is best explained by supposing that turgescence of the middle turbinal of the affected side causes an imprisonment of the air in the frontal and anterior ethmoidal cells by blocking their exits into the nose. Absorption of the contained oxygen by the lining membrane of the cells brings about a vacuum, congestion and swelling of the membrane follow, producing irritation of the contained nerve endings, branches of the ophthalmic division of the fifth nerve with resulting reflex ocular disturbance. An acute congestion occurs also in the orbital tissues as a result of the blockings of the branches of the ophthalmic artery which supply the lining membrane of these cells.

3. The application of adrenalin to the affected middle turbinal is a specific means of diagnosis of this condition by re-establishing air communication between nose and sinuses with resulting relief of subjective symptoms.

4. A specific treatment is the resection of the anterior third of the affected middle turbinal with consequent exposure of the exits from these sinuses and permanent relief from the subjective symptoms. (See *Ophth. Record* for complete article.)

DISCUSSION.

Dr. N. M. Black, Milwaukee, reported two cases similar to those cited by Dr. Brawley. (See *N. Y. Med. Jour.*, June 2, 1906.)

Dr. Brown Pusey directed attention to the fact that relief might have been afforded these patients merely by the bleeding from the turbinates, as this has been known to occur quite frequently.

Dr. F. A. Phillips stated that it must not be forgotten that there exists a relationship between lowered vision and hysteria, and that it is necessary to take the fields and make other observations in these cases before hysteria is excluded. The relief that is afforded from the simple application of adrenalin is easily accounted for in the class of cases known as hysterical amblyopias and asthenopias. He thought that Dr. Black's cases went through the typical cycle of hysterical manifestations. There was no original disturbance to account for the symptoms present, simply a functional disturbance, hysterical in character.

Dr. Black replied that on examination of the fundi of his patients nothing abnormal was found, except when the electric ophthalmoscope was used, when he clearly saw a peculiar punctate condition about the macular region, fine yellow spots, fifty or sixty of them, extending over an area about the size of the disc. These spots had disappeared entirely after the vision had become normal.

Dr. Brawley agreed with Dr. Phillips as to the necessity of making more careful and thorough examinations of the fundi and eye grounds of this class of cases. He was not ready to believe that these cases were hysterical amblyopias. In his own case the symptoms were always the same and the results obtained from treatment were always identical. His symptoms were exactly the same as those experienced by the patients whose histories he reported.

A FRAGMENT OF STEEL IN THE EYE.

Dr. Wm. H. Wilder reported the case of a young man who was working with a hammer and cold chisel when a piece of steel flew into the left eye. There seemed to be some irritation of the lid and a small wound, about one and a half millimeters in length, was seen just within the limbus at the nasal side. Examination of the fundus revealed a scar or track in the interior temporal quadrant of the choroid at the end of which was a black object, apparently a little mass of pigment, which at that time was supposed to be a foreign body. A little blood vessel ran across this track. With the large magnet the piece of steel was brought up to the wound, yet it could only be extracted after the wound had been enlarged slightly with Knapp's dissection knife; then even the metal could not be withdrawn with the Hirschberg magnet, because, when the tip of the magnet was withdrawn, the foreign body stripped off. With the large magnet the fragment was, however, easily withdrawn. Recovery has been uneventful and without reaction; the media are perfectly clear and the object in the choroid which was mistaken for a foreign body, can still be seen; vision has returned to normal.

ANOTHER SUCCESSFUL MAGNET OPERATION WITH AN UNUSUAL TERMINATION.

Dr. H. B. Young, Burlington, Iowa:—The patient presented a 6 mm. penetrating corneal wound caused by a piece of steel striking the eye an hour before; a tag of iris incarceration was removed and a piece of steel 6 by 7 by 1 mm. in size removed, through an enlarged incision, by the Haab magnet after failure with the hand magnet. The wound healed promptly, although some iritis supervened; the eye was quiet a month later, with qualitative vision and doubtful light perception; the tension was distinctly lowered, though there was no ciliary tenderness. A week later the patient suddenly became wildly excited, then maniacal, incoherent, and finally oblivious to his surroundings, and died on the sixth day, apparently from exhaustion; his temperature and pulse were normal throughout. At autopsy the cavities of the skull, thorax and abdomen were opened and the contents found macroscopically normal. The eye, with a section of the nerve, was removed and given to Dr. Brown Pusey for further study.

A BACTERIOLOGICAL STUDY OF FIFTY CASES OF CONJUNCTIVITIS FOUND IN CHICAGO DURING THE PAST YEAR.

Dr. Brown Pusey reported the results of some work done in Chicago during the last year on the bacteriology of the normal and diseased conjunctiva. He finds the Gram positive bacillus of the group pseudo-diphtheria or xerosis almost constantly

present in the conjunctival sac. He has not seen a case where this organism could have been considered the pathogenic agent. Staphylococci are very frequently found in the conjunctival sac; in Chicago one seldom makes a smear or culture from the conjunctival sac without finding staphylococci. He found staphylococci where no inflammatory symptoms existed and in cases of conjunctivitis where there was little question that this organism was the pathogenic agent. The organism most frequently found as the cause of acute conjunctivitis in Chicago is the pneumococcus. Dr. Pusey has found 12 such cases in the year. These cases were sporadic; so far as he knows there has been no epidemic from this organism in Chicago during this time. He had four cases of acute conjunctivitis caused by the influenza bacillus; three of these cases were in one family and recovered in three or four days without treatment. He has had in this time three cases of gonorrheal infection of the eye. One of these cases was in an elderly woman and the mild character of the inflammatory reaction was remarkable. He found infection of the conjunctival sac by the diplobacillus of Morax-Axenfeld in eleven cases. Seven of these were cases of chronic conjunctivitis, three were cases of acute conjunctivitis, and in one there were no symptoms. He has been actively on the lookout for the Koch-Weeks bacillus, but has not seen it in Chicago. In concluding he called attention to the facts that the pneumococcus appears to be the most frequent cause of acute conjunctivitis in Chicago and that the diplobacillus of Morax-Axenfeld is the most frequent known infectious agent giving rise to chronic conjunctivitis. He emphasized one point brought out prominently by his series of cases, namely, that one must be most careful about venturing an opinion regarding the nature of the infectious agent from the clinical findings; in his cases he had a severe case of acute conjunctivitis caused by the Morax-Axenfeld diplobacillus and a case with very slight reaction caused by the gonococcus.

E. V. L. BROWN, *Secretary.*

GREENE COUNTY.

The annual meeting of the Greene County Medical Society was held in Mercantile Hall, Whitehall, Ill., Friday, Sept. 14, 1906. Called to order by President Chapman. Minutes of the previous meeting were read and approved. In the absence of Dr. F. H. Russell, member of the board of censors, Dr. H. W. Hand was appointed to act with Drs. Howard, Burns and Gooch. The application for membership of Dr. Royal of Wrightsville having been presented at a previous meeting, was recommended by the board of censors, and, on motion of Dr. Hand, the secretary was instructed to cast the ballot of the society for the applicant. The election of officers for the ensuing year resulted as follows: President, Dr. H. W. Chapman; first vice-president, Dr. F. H. Russell; second vice-president, Dr. Jas. Squires; secretary and treasurer, Dr. H. A. Chapin.

The board of censors reported on the application of Dr. E. K. Shirley, Whitehall, Ill.; Dr. L. O. Hamilton, Barrow, Ill.; and Dr. H. W. Smith, Roodhouse, Ill., for action at the next meeting. Whitehall, Ill., was recommended as the next place of meeting, Dec. 14, 1906. The essayists appointed for the next meeting are: Dr. J. W. Adams, Carrollton; Dr. F. H. Russell, Eldred; Dr. H. Converse, Greenfield; Dr. E. H. Higbee, Roodhouse; Dr. H. A. Chapin, Whitehall. On motion the report of the board of censors was unanimously adopted.

Dr. Percy, of Galesburg, President of the Illinois State Medical Society, then read a most interesting and instructive paper on The Borderland of Insanity, which was ably discussed by the members and visitors. After the discussion Dr. Percy explained in detail the plans of the committee on medical defense, setting forth its advantages.

The question of life insurance examinations was discussed and the following resolution adopted:

Resolved, That we, the undersigned members of the Greene County Medical Society, and all other reputable physicians of said county, do hereby agree, by subscribing our names to this resolution, that we will not make an examination for any old line life insurance company for less than five dollars (\$5.00), nor

for any mutual or fraternal insurance company for less than two dollars (\$2.00), and that any physician who would violate this resolution would be deemed unworthy to be met in counsel.

The secretary was instructed to present the resolution to each physician in the county for his approval and signature.

On motion of Dr. Squires the thanks of the society were extended to Dr. Percy for his attendance and excellent paper.

After remarks regarding the future work, the society adjourned. Those present were: J. F. Percy, Galesburg; Howard Burns, E. S. Gooch, J. W. Adams, James Squires, Carrollton; E. H. Higbee, H. W. Smith, Roodhouse; A. Royal, Wrightsville; L. O. Hamilton, Barrow; H. W. Chapman, A. W. Foreman, J. W. Redwine, G. W. Burns, E. K. Shirley, H. A. Chapin, W. C. Day, H. W. Hand, Whitehall.

H. A. CHAPIN, *Secretary*.

LAWRENCE COUNTY.

The Lawrence County Medical Society met in regular session Sept. 3, 1906, with the following members present: Drs. Z. D. French, J. B. Bryant, A. G. Mountz, H. V. Lewis, J. E. Emmons, F. F. Petty, H. K. Murphy, B. F. Hoekman and Chas. P. Gore. Papers were read by H. K. Murphy, of Sumner, and F. F. Petty, Chauncey. Both papers were of value to the society, and all members present took an active part in the discussion. One of the important things the society did in the matter of business was to vote unanimously to accede to all the requirements of the state society in the matter of dues. This meeting was one of the best the society has ever had.

B. T. WORKMAN, *President*.

CHAS. P. GROVE, *Secretary*.

VERMILION COUNTY.

The Vermilion County Medical Society met September 10, in the City Hall at Danville. The paper of the evening was on Functional Disorders of the Stomach, by Robert McCaughey, of Hoopston. He briefly reviewed the anatomy and physiology of the stomach, followed by a demonstration of stomach contents. He showed how absurd it is to attempt diagnosis of a stomach disorder without a stomach analysis. One might as well attempt to diagnose a kidney lesion without a urinalysis. The discussion was opened by A. M. Miller of Danville. Dr. J. H. McIntosh proposed that the physicians unite on a plan of collecting accounts and keeping track of "dead beats." The chair appointed a committee to present this to the physicians and have some more definite information by the next meeting. Adjourned.

E. E. CLARK, *Secretary*.

OBESITY.

W. C. ABBOTT, M.D.

CHICAGO.

At the last meeting of the Illinois State Society, Dr. Croftan contributed a suggestive paper on obesity (ILLINOIS MEDICAL JOURNAL, Sept, 1906). Speaking of the treatment, he mentioned diet, hydropathy, exercise, sanatoria, and limited the use of drugs strictly to thyroid extract. To this he also made the grave objection that its use sometimes developed glycosuria, a thing particularly to be dreaded in the obese, since they are already predisposed to diabetes. That thyroid extract occasionally causes disagreeable, and even dangerous symptoms, and is uncertain and transient in its effects, may be set down to lack of care and skill in its administration. But—is there nothing in obesity but overeating, as compared to the need of food?

In the discussion Dr. Elliott spoke of the general excess of vascular tension in the obese; and, while he affirmed that obesity was only an error of diet and nothing more, in the next breath he contradicted this by saying that, in many cases, there

was a morbid disposition to lay on fat, the weight increasing even when the caloric value of the food is low, its quantity or bulk small.

Dr. Marcy confirmed the statement that many obese persons eat little, but said the one important thing is graduated exercise. Dr. Webster confirmed the occurrence of obesity in small eaters and looked on them as especially liable to diabetes. Dr. Mettler classed obesity as a tropho-neurotic malady. Dr. Fairbrother insisted on diet, but added cathartics.

We can not look on this malady as so simple a matter. There is a reason why one man will gain flesh, while eating and drinking less than another man who remains thin. Granting the necessity of diet and exercise in the reduction of fat, there are other elements in the disease, and, consequently, other indications to be met, and, if we comprehend these, we may be able to meet them with appropriate remedies. That we can not do this signifies a lapsus in our knowledge of pathology and therapeutics.

But we may reason back to a certain extent. If we find a definite pathologic state present, and ascertain empirically that a certain medicament will remove the symptoms and restore healthy equilibrium, we may assume that it does so by removing the pathologic conditions that produced the evident symptoms. We do not know how mercury cures syphilis, and yet we know that it does cure it. Similarly, we know that phytolaccin will, in many cases, materially reduce the weight of the obese by causing the disappearance of the fat. The difficulty in general recognition of this fact is that the effect does not at once follow, but is usually not manifested until the drug has been taken for more than three months. When the absorption of fat sets in, it is unmistakable.

The best results follow when the diet has been arranged and the exercise has been exactly fitted to the case, phytolaccin, in doses well borne, has been given, and, to this, moderate doses of thyroid extract are added. Leave out either of the four remedies and the results are not as good, at least, the reduction is slower. This is a good method for the first month, when a reduction of material dimensions may be secured, which will reconcile the patient to persistence in treatment. After this, it is usually best to dispense with the thyroid extract and continue with the other remedies, being satisfied with a moderate reduction of not more than five pounds a month. This is safe, and may be accomplished without more interference with the patient's diet and habits than he will submit to without feeling his restrictions unbearable.

NEWS OF THE STATE.

Dr. Lister has located at Cabery.

Dr. Bowden Bird has located at Salem.

Dr. Albert Purcell has located at Streator.

Dr. Thomas Pickle has located at Mill Creek.

Dr. C. E. Gwinn, of Oakland, has located in Sadorus.

Dr. C. C. Kost has removed from Dixon to Freeport.

Dr. W. O. Beam, of Moline, has moved to Davenport, Iowa.

Over thirty cases of diphtheria are reported from Spring Valley.

Dr. E. O. Hutchins has removed from Keokuk, Iowa, to Warsaw.

Dr. Wilbur J. Hawkins, Aurora, is ill at his home with appendicitis.

Dr. J. W. D. Mayes, of Illiopolis, has moved into a beautiful new home.

Dr. Albert S. Wall, Champaign, has returned after four months in Europe.

Dr. and Mrs. Bernard Fantus, of Chicago, have returned from Europe.

Dr. J. E. Huston has taken an office in the Odd Fellows' Building, Danville.

Dr. J. M. Coleman, of Delavan, has been appointed physician for Pekin Township.

Dr. J. S. Cunningham, of DesPlaines, has removed to 6527 Normal avenue, Chicago.

Dr. William C. Hill, Murphysboro, is reported to be critically ill with typhoid fever.

Dr. B. B. Griffith, of Springfield, spent the month of August at Colorado Springs.

Dr. M. W. Snell, of Litchfield, has recently been made the cashier of the bank in that city.

Dr. Lewis H. Skaggs, Ellsworth, was overcome by the heat, August 23, but is improving.

Drs. Jeremiah H. Stealey and Carl F. Snyder will establish a modern sanitarium in Freeport.

Dr. and Mrs. Lyman Ware, Chicago, have returned from a four months' trip in Europe.

Dr. and Mrs. Julien E. Hoquembourg have returned after a month's trip to the Pacific coast.

Dr. George A. Wash. of Palmyra, is in Ohio, with a view of becoming a resident of that state later on.

Dr. Amos S. Bickel, North Chillicothe, is seriously ill with anemia at St. Francis' Hospital, Peoria.

It is reported that the schools at Bushnell have been closed on account of an epidemic of diphtheria.

Dr. Clinton G. Lumley, who was operated on for appendicitis August 28, is making good progress toward recovery.

During August, the Visiting Nurses' Association, Chicago, cared for 1,227 patients and the nurses made 5,738 visits.

Dr. E. H. Leib has removed to Springfield and has taken offices with his brother, Dr. J. R. Leib, in the Myers Building.

Dr. George E. Baxter, Chicago, was held up and robbed of a gold watch and a small amount of money, September 12.

Dr. E. R. Herrmann has purchased the practice of Dr. J. S. Cunningham, recently of DesPlaines, and will locate there.

Dr. Lawrence A. Mendonsa, a graduate of the St. Louis College of Physicians and Surgeons, has located in Springfield.

Dr. Frederick Tice, of Chicago, has returned from abroad and resumed practice in the Columbus Memorial Building.

The Swedish-American Hospital Association, Green and Sixtieth streets, Chicago, has borrowed \$35,000.00 for improvements.

Dr. Fred D. Hollenbeck has removed to 4411 North Ashland boulevard, Chicago. His office remains at 394 East Chicago avenue.

Dr. C. J. Eads, of Oquawka, has sold his practice to Dr. C. E. Kaufman and has discontinued the practice of medicine for the time being.

Dr. Bellwood, of Abingdon, narrowly escaped death from strychnin poison recently. A large dose of the medicine was taken by mistake.

Dr. Albert H. Dollear, Jacksonville, has been appointed assistant physician of the Illinois Western Hospital for the Insane, Watertown.

Dr. Henry W. Cheney, 369 East Sixty-third street, Chicago, has returned to the city, after an eight months' absence in Berlin and Vienna.

Dr. Maximilian Herzog, who recently returned from the Philippine Islands, has been elected pathologist to the Michael Reese Hospital, Chicago.

Dr. Christian R. Hartung was examined in the insane court, September 6, and committed to the Cook County Hospital for the Insane, Dunning.

Dr. Carl E. Black, of Jacksonville, chairman of the Publication Committee of THE JOURNAL, has returned from a summer vacation trip to Germany.

The Board of Health of East St. Louis has instructed the health inspector to see that conductors of street cars enforce the laws regarding expectoration.

An epidemic of diphtheria at Bardolph, near Bushnell, has grown to such proportions that the authorities have ordered all schools and churches closed.

The Annual Physicians' Golf Tournament was held at Glenview, September 18 and 19. A large number of Chicago physicians participated in the tournament.

Dr. Roskoten, 200 South Jefferson avenue, Peoria, has sold his property in that city and will remove to the State of Washington, where he will engage in practice.

Dr. R. A. McClellan and wife, of Yorkville, started for New York, September 22, for a three months' stay. They will spend most of the time in London and Berlin.

The Illinois State Board of Health has begun a campaign against the fake doctors of the State. During the month of August, fifty-six prosecutions were instituted.

The King of Portugal has conferred on Dr. Alexander Hugh Ferguson, of Chicago, a commandership in the Order of Christ of Portugal in recognition of his original work in surgery.

Chief of Police Bargren, of Rockford, is making an effort to prevent the distribution of pamphlets, advertising patent medicines, which have been given out by the free distributors in his city.

Dr. Edwin Kuh, 4330 Drexel boulevard, Chicago, has begun suit against Benjamin R. Cahn for \$3,000.00, said to be due him for professional services rendered during the past six years.

The twelfth annual commencement exercises of the Illinois Medical College were held August 23, when degrees were conferred on a class of fifty by Dr. Heman H. Brown, president of the college.

Dr. Alfred C. Girard, United States Army, retired, has been obliged to give up his plan of practicing in Chicago on account of the serious illness of his wife, and has returned to the Pacific coast.

Dr. P. J. H. Farrell, of Chicago, has been nominated for the Board of Review of Cook County on the Independence League ticket. Dr. B. S. Turner has been nominated for assessor on the same ticket.

It has been announced that Dr. D. K. Pearsons has donated an additional \$5,000 toward the fund for the new Presbyterian Hospital, which brings the total fund to within \$10,000 of the \$400,000 required.

St. Vincent's Hospital, Taylorville, was dedicated, August 22, with appropriate ceremonies. The hospital was erected at a cost of about \$25,000 and will be in charge of the Sisters of the Most Precious Blood.

Dr. F. G. Hall, Burlington Relief Medical Examiner at Galesburg, has resigned his position with the company to go into private practice. He will be succeeded by Dr. A. O. Early, of Grand Crossing, Wisconsin.

Dr. Wm. A. Garner, of Clayton, has been sued for \$10,000.00 damages by the administrators of the estate of Roy Johnson, who died in August, 1905. It is claimed that the young man's death was due to infection.

Comptroller McGann has received an offer from a woman philanthropist to erect a school for the blind on the Gage farm. The donor proposes to make the school non-sectarian and expects to put up a building to cost about \$50,000.

The Lutheran-Norwegian Deaconess Hospital has appointed the following staff: Surgical, S. Dahl, A. Holmboe, B. E. Henderson, J. V. Fowler, J. H. Burwash; medical, M. T. Quailes, E. J. Hook, J. R. Ballinger, A. B. Oyen and Carl Rolleson.

Dr. Podstata, who was recently appointed superintendent of the Elgin Asylum, has announced that he will hereafter discharge any em-

ployés who indulge in gossip. It is reported that Samuel Case, the druggist, has been discharged for this reason.

A joint meeting of the various state boards was held at Kankakee, on July 31, at which it was decided to make a number of changes in the conduct of the Eastern Hospital for the Insane. A training school for nurses and attendants will be established, and improvements in the system of nursing are contemplated.

The Illinois State Board of Health has issued a bulletin for August, containing a large amount of interesting matter. Considerable space is devoted to the matter of prosecution of the violators of the Medical Practice Act and to itinerant vendors. Many other matters of interest to the profession in the State are also considered.

Dr. Vaclav H. Podstata, superintendent of the Illinois Northern Hospital for the Insane, Elgin, announces the opening of a training school for attendants and nurses on October 1. The school will have a three years' course, and the attendants will be given more time off duty and the hours in various quarters will be shortened.

Dr. Frederick W. Whitney, said to be connected with the Louis Chemical Company, was arrested by United States Deputy Marshall Wainwright, at Chicago, on September 22, on a warrant charging misuse of the mails. Postoffice inspectors state that a certain formula has been advertised through the mails in violation of the law.

The Coroner of Cook County reports, for August, a larger death rate than any month since the Iroquois Theater fire. The table of deaths from other than natural causes during the month was as follows: Suicide, 39; drowning, 29; heat prostration, 27; railroad accidents, 26; homicide, 14; street car accidents, 13; lightning, 1; scenic railway accident, 1.

As the result of a conference held between the Secretary and Assistant Secretary of State Board of Health and the directors of the State Board of Water Survey, Urbana will probably have, in a short time, a modern septic tank for the purpose of demonstrating to the officials of the various municipalities the advantages of this method of sewage disposal.

Anton P. Freund, druggist at St. Luke's Hospital, has been discharged from that institution as a result of his mistake in furnishing atropin instead of a proprietary preparation of a somewhat similar name in filling a prescription for a patient in the hospital, who died soon after. The coroner's jury recommended that Freund's license as pharmacist be revoked.

A new site has been provided for the Chicago Lying-in Hospital and Dispensary, now located at 294 Ashland boulevard, at the northwest corner of Vincennes avenue and Fifty-first street. The cost was \$52,500, and the new hospital will be erected at a cost of between \$150,000 and \$200,000. The new hospital, with 60 beds, will be able to care for 1,200 patients a year.

Some of the residents of Niles Center have been victimized, it is reported, by "Doctor" Robt. H. L. Saunders, who located in that village a short time ago. It is stated that Dr. Saunders announced that he was heir to a large fortune left him by his uncle, which would come into his

possession as soon as he was married. After being the social lion of the village for several weeks, he is said to have left the town.

Dr. B. S. Dennison, formerly of Salida County, Colorado, was arrested in Chicago, September 22, charged with arson and conspiracy, and gave bond before Judge Prindiville. It is alleged that he was implicated in setting fire to a jewelry store in order to defraud the insurance companies. Dr. Dennison asserts that the charges are false and are part of a conspiracy to obtain control of a copper mine in which he is interested.

The members of the Chicago Tuberculosis Institute have perfected plans for the erection, at Dunning, of portable houses for patients suffering from tuberculosis, who will be given treatment at the new camp, which is now being established. The houses consist of dormitories, 26 by 44 feet, and include two porches, a kitchen and a dining room. Three of the cottages are now ready and the camp, with accommodations for 20 or 30 patients, will probably be opened this week.

Chas. Passow & Sons, manufacturers of billiard tables and saloon fixtures, have complained to the Chicago Health Department that the Jenner Medical College, 196 Washington street, has been burning cadavers in the furnace in the basement of their building, and that the health of the occupants of the building was thereby being endangered. This statement is denied by the registrar of the school, who says that the charge is the result of a quarrel between one of the Passow brothers and the college janitor.

Typhoid fever is reported to be prevalent in Alton, and the necessity of boiling all drinking water is urged. Joliet reports four cases of scarlet fever. Diphtheria has been prevalent in Brereton, and the situation is being investigated by an official of the State Board of Health, who recommended that every house in which there had been a case of diphtheria should be properly disinfected and fumigated, and that all clothes and wearing apparel should be disinfected. He ordered the two families at present under quarantine to be released and the houses fumigated.

The State Board of Charities, in its quarterly report, just issued, states that since the organization of the board, last April, the commissioners have visited every hospital for the insane in the state, 52 county almshouses, 52 jails, 19 orphanage and child saving institutions; it has investigated the charges against the Soldiers' Orphans' Home, Normal; the Soldiers' Widows' Home, Wilmington, and the Asylum for Feeble-minded Children, Lincoln, and has inspected the schools for the deaf and blind at Jacksonville, and the Soldiers' and Sailors' Home, Quincy.

The Health Department of Chicago has discovered 6 cases of typhoid fever, one of which was fatal, between Morton street and Tuohy avenue, Rogers Park. In this location, the residents have no city water service, and are obliged to depend on well water or purchased water for drinking or household purposes. About one hundred cases have been reported to the Board of Health in various parts of the city. The officials declare that the milk and ice supply is responsible for the outbreak of this disease. Ice companies have run short and have been compelled to import ice

from the country that was cut from ponds filled with stagnant and impure water.

At the annual convention of the Illinois State Coroners' Association, held in Chicago, September 11, 48 counties were represented. Peter M. Hoffman, coroner of Cook County, was elected president of the association; C. Z. Noel, Joliet, and C. N. Streeper, Alton, were elected vice-presidents; R. L. Baker, Peoria, was elected secretary, and William Woodruff, Springfield, treasurer. One of the most important matters brought up was the necessity of passing a law compelling physicians to report cases of a certain class to the coroner. There is nothing at present in the statutes to prevent a physician of Illinois from signing a death certificate, although he may not have attended the deceased in the capacity of physician for a number of years.

The State Board of Charities, in its quarterly bulletin, states that, as a result of its inquiries, the board feels that there is pressing need for a correlation of the energies of the state hospitals for the insane. No two institutions are alike, but in the majority of items of administration standardization is necessary to elevate the institution to a high plane of efficiency and economy. The hospitals for the insane were found to be top heavy on the custodial side. The superintendents are burdened with business details which prevent them giving sufficient attention to the medical administration. For this reason, the hospitals are more like detention boarding houses than like places for the modern treatment of hopeful cases and the industrial re-education of chronic types.

The American Surgical Trade Association requests the insertion of the following notice regarding a uniform scale for all catheters, bougies and sounds: At a meeting of the American Surgical Trade Association, held in Philadelphia, June, 1906, it was resolved that after January 1, 1907, the trade adopt the French scale for all catheters, bougies and sounds. A committee was appointed for the purpose of getting up a proper and accurate French scale card, and the same will be mailed to you. Every physician will see the importance of this step, as you are all acquainted with the annoyance of having catheters, bougies and sounds and other instruments marked in American, English or French numbers. You are requested from above date to use only the French scale in ordering such goods and when no scale is specified orders will be filled by the French scale.

The Illinois Coroners' Association will meet in Springfield in November to draft a bill for presentation to the next legislature. The legislative committee of the State Association is composed of the following members: Peter Hoffman, coroner for Cook County; Dr. Leslie Baker, coroner of Peoria County; Wm. Woodruff, coroner of Sangamon County, and Coroner Streeper, of Madison County. The bill will include the following points: 1. Witnesses before a coroner's inquest are to be required to answer questions put by the coroner. 2. Autopsies to be held and paid for on the order of the coroner. 3. Coroners to be allowed a per diem fee when inquests extend over more than one day. 4. Physicians to be compelled to report cases to the coroner, under penalty for failure to do so.

5. A penalty provided for moving or disturbing a dead body without authority from the coroner. 6. Undertakers are not to inject embalming fluids into a body without the coroner's permission. 7. Undertakers are not to use any fluid containing arsenic or strychnin under any circumstances. 8. Coroners are to be allowed the same fee as sheriffs for serving subpœnas.

The Military Tract Medical Association will hold its next annual meeting at Macomb, Oct. 18, 1906. The officers are as follows: President, R. C. Matheny, Galesburg; first vice-president, W. E. Shellenger, Canton; second vice-president, J. P. Roark, Bushnell; secretary-treasurer, F. E. Wallace, 322 Warren avenue, Chicago; board of censors, J. B. Bacon, Macomb; S. M. Miller, Peoria; M. T. Rogers, Cuba.

Committee on Necrology, W. E. Griggsby, Blandinsville.

Program:

1. President's Introductory Address—R. C. Matheny, Galesburg.
2. The Regulation of the Medical Profession—Hon. L. Y. Sherman, Lieutenant Governor of Illinois, Macomb.
3. Non-operative Treatment of Pelvic Infection in Women—T. J. Watkins, Chicago.
4. Cancer of the Skin, Illustrated with Stereopticon—Wm. A. Pusey, Chicago.
5. Retention of Urine: Its Causes and Treatment—J. A. Patton, Chicago.
6. Modern Neurological Diagnosis—L. H. Mettler, Chicago.
7. Problems in Infant Feeding—T. G. Allen, Chicago.
8. The Ultimate Result in Hip Disease—J. L. Porter, Chicago. Illustrated by *x-ray* pictures and photographs.
9. Euphysema of the Maxillary Antrum—A. M. Corwin, Chicago.
10. Subject Not Announced—A. McDermid, Chicago.
11. Subject Not Announced—J. A. Egan, Springfield.
12. Subject Not Announced—L. T. Thurman, Macomb.
13. Pleasant Medication—Bernard Fantus, Chicago.
14. The Limitations and Requirements of the Modern Treatment of Tuberculosis—J. W. Pettit, Ottawa.
15. The Dumb-bell Intestinal Anastomosis—J. B. Bacon, Macomb.
16. Vibration—M. S. Marcy, Peoria.
17. Postoperative Adhesions—L. S. Stremmel, Macomb.

MARRIAGES.

DR. H. B. MILHON and Miss Rosella Clawson, both of Owaneco, Oct. 2, 1906.

FRANK A. HILL, M.D., to Miss Fidele A. Madison, both of Chicago, August 15.

CHARLES BURR CALDWELL, M.D., to Miss Lydia Stevenson, of Monticello, Ill., August 30.

B. F. ZOBRIST, M.D., Jewett, Ill., to Miss Lillie A. Apple, of Keyport, Ill., September 4.

DR. IRVING W. METZ, of Springfield, and Miss Edith Thorp, of Havana, Sept. 26, 1906.

JOHN A. CAVANAUGH, M.D., Chicago, to Miss Irene Cummings, of Rock Valley, Iowa, September 12.

R. B. HOAG, M.D., Lincoln, Ill., to Miss Hephzibah E. Green, at South Pasadena, Cal., September 6.

RICHARD H. STREET, M.D., Chicago, to Miss Lillian Woodward Gunekle, of New York City, August 27.

HENRY BASCOM THOMAN, M.D., Chicago, to Miss Louise Downing Wendell, of Louisville, Ky., September 5.

ANSON LE ROY NICKERSON, M.D., Mokena, Ill., to Miss Laura May Chesney, of Bucyrus, Ohio, September 12.

DEATHS.

JOSEPH WOLFGARTEN, M.D., National Medical University of Chicago, 1895, died at his home in Chicago, September 10.

EDWARD L. BIRCH, M.D., Miami Medical College, Cincinnati, 1879, died at his home in Robinson, Ill., August 7, from ptomaine poisoning, after an illness of two months.

GEORGE W. FELLOWS, M.D., Vermont Medical College, Woodstock, 1851, for many years a practitioner of Kewanee, Ill., died at his home in Creston, Iowa, September 6, from Bright's disease, after a long illness, aged 78.

MAURICE JAMES CHASE, M.D., Vermont Medical College, Woodstock, 1850, for half a century a prominent practitioner of Galesburg, Ill., died at the home of his daughter in that city, September 6, after a brief illness, due to the effects of a fall, aged 80.

CHRISTOPHER ANTON JAEGER, M.D., Western College of Homeopathic Medicine, Cleveland, 1864, a veteran of the Civil War, said to be the oldest practitioner of Elgin, Ill., died at the Sherman Hospital, Elgin, August 24, after an illness of one year, aged 79.

WILLIAM C. HILL, M.D., College of Physicians and Surgeons of Chicago, 1902, a member of the American Medical Association, and a prominent physician of Murphysboro, Ill., died at St. Andrew's Hospital, Carbondale, Ill., September 4, after an illness of five weeks, aged 25.

EDITH WARNER CADWALLADER CROWDER, M.D., Woman's Medical College of Pennsylvania, Philadelphia, 1900, formerly a member of the American Medical Association and of the Philadelphia County Medical Society, and professor of obstetrics in the Woman's Medical College of Pennsylvania, died at her home in Chicago, Aug. 18, 1906. On her marriage to Dr. Thomas R. Crowder, of Chicago, in October, 1905, all her medical appointments were resigned.

IN MEMORIAM.

Dr. W. J. Class, member of the Chicago Board of Health, died at Mercy Hospital, Benton Harbor, Michigan, Aug. 9, 1906, from cerebral thrombosis. The funeral was conducted from 151 Jansen avenue, Chi-

ago. His associates in the health department sent a floral tribute in the form of an American Medical Association membership badge. The pall bearers were Dr. C. S. Bacon, Dr. Edward Ochsner, Dr. Heman Spaulding, Dr. Henry Hartung, Dr. L. Maywith and Dr. Wm. Hessert. Dr. Class had been in ill health for some time as the result of overwork. He had recently bought a piece of land on the St. Joseph River near Benton Harbor, where he intended to build a residence. By living a quiet life, he hoped to regain his health, after which he intended to resume his scientific research work. As a result of his death, the Chicago health department lost a noted investigator and faithful inspector. Eight years ago, as a result of a civil service examination, he became a member of the department, which relation continued until the time of his death. He was a graduate of Rush Medical College, an ex-interne of Michael Reese Hospital and a postgraduate student of Vienna and Dresden. Dr. Class became prominent as a result of research work he did in connection with scarlet fever and cerebrospinal meningitis. In the first-mentioned disease, he discovered a germ which he found constantly present in over three hundred consecutive cases of scarlet fever, which germ fully complies with Koch's law. He also demonstrated through animal experiments that there is a specific antitoxic serum for this dreaded disease. His work on this germ has been published in medical journals of this and other countries. A number of years ago he published a report of a case of cerebrospinal meningitis which appeared in *The Journal* of the American Medical Association, in which he showed that the disease is contagious and that the same means should be used to prevent its spreading that are taken in other contagious diseases.

At the time of his death, he had only reached the age of 32 years. Nevertheless, as a result of untiring energy and ambition, he accomplished; within a few years, a whole life's work. Twelve years ago, when only 20 years of age, he remarked to his brother, Dr. F. L. Class, "I prefer to die at the age of 35, while having done something for mankind, than to die at a ripe old age without accomplishing anything." Dr. Class was of noble descent, descending from the house of Orleans, France. Some time in 1600, two brothers of the house of Orleans emigrated, one to Holland, while the other located in Germany, in the Province of Nassau. Dr. Class was a descendant of the German branch of the house. His paternal grandfather was very conspicuous in educational work and had great influence over those coming in contact with him. He was a brilliant writer, and the products of his pen were nearly all of them stimulated by the desire to make mankind better and happier. Many of his writings are still preserved in his native town, where they are used in teaching the youth, and when a son reaches that age at which proper guidance is essential so he will develop into a good and moral man it has become a custom in that part of Germany for the father to point to the doctor's grandfather and implore his son to pattern his life after him. Dr. Class very much resembled his grandfather, always inclining toward that which is good and pure. He was also a great admirer of Nature and good music. His father came to this country when a young

man, living with an uncle in Cincinnati, Ohio, who was in the drug business. Here he completed his pharmaceutical education, having already studied chemistry under two of Germany's most prominent chemists. He then studied medicine in Ohio Medical College and moved to Iowa, where he practiced his profession, a few years later coming to Chicago, where he engaged in the drug business, in which he continued until his death, in 1897. It was in Iowa he met and married Miss Abel, an educated and highly intellectual young lady. The result of this union was two sons, the doctor and his brother, Dr. F. L. Class, who is at present practicing in Huron, S. D. F. L. C.

CORRESPONDENCE.

DR. NICKERSON RESIGNS INSURANCE APPOINTMENT.

Dr. Nickerson has forwarded the following letter which explains itself:

QUINCY, ILL., June 15, 1906.

Drs. W. R. Bröss and Arthur Poll, Medical Directors Equitable Life Association, New York City, New York.

DEAR SIRs:—Some time ago I received a communication from the company, stating there would be a reduction of fees from \$5.00 to \$3.00 for examinations. This I do not consider adequate compensation for the service. I have been your chief examiner at Quincy, Ill., and nominator for the ten adjacent counties the past twenty years. The company has always treated me handsomely, and I have no reason to complain of past favors. The Illinois State and Adams County Medical Societies recently passed resolutions asking their members to desist from making examinations on the basis of this reduction. Being a member of these societies, I will have to present my resignation as your examiner and nominator.

Yours respectfully,

L. H. A. NICKERSON, M.D.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

The following new members from Illinois have been received during the last three months:

JULY.

Amerison, G. C., Chicago.	Fox, C. M., Chicago.
Barnes, H. T. Maywood.	Freeman, H. E., Millington.
Brown, A. L., Vienna.	French, W. M., Chicago.
Buckley, J. E., Vienna.	Fults, J. C., Waterloo.
Burnside, L. A., Martinsville.	Gleeson, Benj., Danville.
Camerer, J. D., Kinmundy.	Hammond, J. L., Chicago.
Carpenter, F. E., Chicago.	Hecox, C. R., Golden.
Catlin, S. R., Rockford.	Hubert, J. F., Chicago.
David, F. E., Chicago.	Hyde, D. L., Chicago.
Diamond, P. T., Chicago.	Jefferson, F. A., Chicago.
Eakin, A. C., Shirland.	Lyness, J. D., Savannah.
Egan, J. C., Chicago.	McDavid, J. T., Decatur.
Engels, N. R., Chicago.	Nickerson, L. H. A., Quincy.
Ferguson, Clara, Chicago.	Oreutt, D. C., Chicago.
Foelsch, A. J., Bondville.	Ostrum, Louis, Rock Island.

Patterson, H. A., Joliet.
 Selby, F. S., Chicago.
 Smith, S. A., Annapolis.
 Stookey, V. P., Colchester.
 Tarr, A. W., Grand Chain.

Thomas, H. B., Chicago.
 Waggoner, E. L., Lebanon.
 Weber, F. J., Olney.
 Williams, H. O., Belknap.

AUGUST.

Baker, R. L., Peoria.
 Blatt, M. L., Chicago.
 Dart, Ralph, Rock Island.
 Ellis, I. W., Murphysboro.
 Evans, C. A., Bluffs.
 Griffin, M. A., Chicago.
 Hobson, E. B., Gillespie.
 Hoover, W. K., Lovington.
 Kilbourn, E. D., Ancona.
 Koch, J. A., Quincy.
 Lence, J. J., Jonesboro.
 McGinnis, Edwin, Orland.
 McKee, H. T., Sparta.

Morgan, J. W., Moline.
 Pautler, N. B., Waterloo.
 Post, W. E., Chicago.
 Roe, M. C., Chana.
 Rose, W. J., Columbia.
 Schmidt, H. G. G., Elgin.
 Schrayner, W. S., Chicago.
 Smith, C. G., Red Bud.
 Stewart, W. B., Joliet.
 Taylor, L. S., Elgin.
 Wharton, J. E., Jacksonville.
 Xelowski, T. Z., Chicago.

SEPTEMBER.

Babb, Helen, Springfield.
 Baxter, A. J., Astoria.
 Benson, E. O., Chicago.
 Cloud, M. Morgan, Chicago.
 Colbourne, J. A., Pontiac.
 Corbus, Howard, Kankakee.
 Colby, Chas. P., Springfield.
 Combs, Geo. W., Ridgeway.
 Counett, James E., Lawrenceville.
 Culhane, T. H., Rockford.
 Dinger, H. A., Red Bud.
 Davisson, Alfred W., Peoria.
 Ede-Punte, Janet J., Chicago.
 Ferry, Lemuel A., Geneseo.
 Gerould, T. F., Centralia.
 Hager, Daniel S., Chicago.
 Hassett, James J., McLeansboro.

Heintz, Edw. Louis, Chicago.
 Horne, Elmer S., Colfax.
 Hubbard, C. M., Virginia.
 Huston, J. W., Virginia.
 Kelly, J. W., Springfield.
 Kraft, O. H., Chicago.
 Lovewell, C. Hubert, Chicago.
 Morgan, Fred B., Cornell.
 Morgan, F. R., Towanda.
 Quist, Frank J., Chicago.
 Rawlins, Benj. L., Chicago.
 Ritchey, R. M., Menard.
 Stotz, Charles Frederick, Chicago.
 Songer, Walter E., Menard.
 Taylor, John F., Buda.
 Webb, William F., Chicago.

NEW MEMBERS OF ILLINOIS STATE MEDICAL SOCIETY.

During the months of July and August the following physicians have become members of the Illinois State Medical Society:

JULY.

E. M. Minnick, Moline, Rock Island County.	L. T. Milles, Caseyville, St. Clair County.
B. C. Anderson, Rockford, Winnebago County.	F. L. Evans, East St. Louis, St. Clair County.
H. M. Voris, East St. Louis, St. Clair County.	Otto W. Knuvitz, East St. Louis, St. Clair County.
John T. Higgs, East St. Louis, St. Clair County.	W. F. Johnson, Ridgeway, St. Clair County.
A. B. McQuillan, East St. Louis, St. Clair County.	W. H. Riley, Ridgeway, St. Clair County.
Louis J. Linder, East St. Louis, St. Clair County.	Claud Sanders, Irvington, Montgomery County.
T. C. Keisling, Lebanon, St. Clair County.	H. M. Glass, East St. Louis, St. Clair County.
J. C. Caldwell, East St. Louis, St. Clair County.	H. M. Daly, Pontiac, Livingston County.
Chas. S. Skaggs, East St. Louis, St. Clair County.	S. M. Barnes, Pontiac, Livingston County.

AUGUST 1.

J. G. Ellis, Cerro gordo, Piatt County.	F. F. Davis, Jeffersonville, Wayne County.
Eugene Coffin, Peoria, Piatt County.	

- W. A. Bulany, Keens, Wayne County.
 F. G. Bufour, Oquawka, Henderson County.
 C. B. Caldwell, Monticello, Piatt County.
 G. T. Cremeens, Dahlgren, Hamilton County.
 David C. English, New Brunswick, New Jersey County.
 V. S. Fildes, Parkersburg, Richland County.
 E. C. Ferguson, Edwardsville, Madison County.
 P. M. Gray, Cisne, Wayne County.
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 A. L. Ward, Bement, Piatt County.
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 E. S. Herriott, Jacksonville, Morgan County.
 Homer A. Millard, Minonk, Woodford County.
 L. H. Wiman, LaMoile, Bureau County.
 C. H. Miller, Boody, Macon County.
 L. N. Lindsay, Forsyth, Macon County.

NEW BOOKS.

SURGICAL SUGGESTIONS. By Drs. Brickner and Moschocowitz. Price, 50 cents, post-paid.

This book is novel, not only on account of the many terse and epigrammatic suggestions given, but because of its general appearance and attractive form. It contains 250 suggestions, grouped under proper headings, and its contents are carefully indexed. While some of the items are familiar to the practiced surgeon, they are all presented in a manner that will impress them on the reader's memory. The book is bound in heavy cloth, stamped in gold, and the text is printed upon India tint paper, with marginal headings in red. This book will be much appreciated by the general practitioner, not alone on account of the value of its contents, but also as an artistic bit of book-making.

PROPHYLAXIS AND TREATMENT OF INTERNAL DISEASES. By Frederick Forchheimer, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, University of Cincinnati, Cincinnati, Ohio. Cloth. Price, \$5.00 net.

This is an eminently practical work, one which concerns itself diligently with the business in hand. It first lays down broad principles, then details the special application of them, where possible; failing that, it indicates the proper direction for their application.

It is essentially a work of breadth. It is also essentially a work of experience. Free from dogmatism, there is the calm assurance of one to whom the path is familiar. In these days of therapeutic pessimism, it is refreshing to find a practical physician to whom the making of a correct diagnosis is but the beginning rather than the end of his craft.

Dr. Forchheimer undertook a difficult task, but he has given us a most excellent work, one that will have a large sale to the general practitioner, a book which has long been in demand.

A TEXT-BOOK OF PHYSIOLOGY. By J. R. Murlin, Ph.D., Instructor of Physiology, Bellevue Medical College, New York City. With an introduction by Graham Lusk, Ph.D., Professor of Physiology, Bellevue Medical College. This is a translation of Tigerstedt's Physiology.

Aside from the general excellence of this book it presents a number of noteworthy and commendable features. The first of these is the manner of approach to the real subject. After a chapter on General Method, in which the author gives some instances of how exact physiological knowledge is gained, he lays a very broad foundation to the special subject of human physiology. The second chapter is on the Physiology of the Cell. This constitutes the biological foundation. The next is a chapter on the Chemical Constituents of the Body, which supplies the chemical foundations. The fourth chapter is devoted to Metabolism and Nutrition. Every chapter of the book is as complete as possible within the limits of a single

volume, and many of them are very originally conceived. This is especially true of the chapter on Metabolism and Nutrition. The chapter on the Circulation and the one on Metabolism and Nutrition fall within the author's own chosen fields of investigation. Needless to say they contain much that is new and of great importance. In his treatment of the Physiology of the Nervous System the author reaches the climax of the book, whether we consider it from the standpoint of the practitioner of medicine or of the general reader. We should not neglect to mention the great number of excellent illustrations. There are 305 illustrations in this work, 63 of which are in colors.

SURGICAL PATHOLOGY AND TREATMENT OF DISEASES OF THE EAR. By Clarence John Blake, Professor of Otolaryngology in Harvard University, and Henry Ottridge Reik, Associate in Ophthalmology and Otology, Johns Hopkins University. The price of this work, in cloth binding, is \$3.50.

This work begins with a chapter on Surgical Anatomy of the Temporal Bone and Adnexa, following which is a chapter on Aseptic Technic; Chapter III, Diseases of the Auricle and External Auditory Canal; Chapter IV, Diseases of the Tympanic Membrane and Tympanum; Chapter V, The Possible Complications and Consequences of Suppurative Otitis Media; Chapter VI, Middle Ear Operations; Chapter VII, Mastoid Operations; Chapter VIII, Adventitious Aural Surgery. This chapter treats of a considerable number of operations, which, though not strictly a part of otology, are, however, necessarily connected with this work: Adenoids, their effect on the organ of hearing; adenoidectomy, subcutaneous and intravenous infusions, lumbar puncture.

The book is well illustrated, mostly from original drawings. A few, however, are copies from original drawings made for Professor Politzer and placed at the author's disposal.

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ORIGINAL ARTICLES

SYMPOSIUM ON SURGERY OF THE PROSTATE.

MEDICAL COÖPERATION IN SURGERY OF THE PROSTATE.*

CARL E. BLACK, M.D.

JACKSONVILLE.

The part assigned me in this important symposium will be presented briefly. The ancient antagonism between medicine and surgery shows itself more prominently in the field of prostatic surgery than almost any other. It stands out conspicuously against the very ancient and universal acceptance of surgical measures for removal of new growths and foreign bodies from the bladder. That the internists and general practitioners have not as yet accepted the benefits of surgery of the prostate is apparent to any one, and that there are good reasons for this attitude is equally plain. The history of prostatic surgery covers many generations of unsuccessful effort, which has deeply impressed itself on the medical mind. In this respect it is different from appendicitis, gall-bladder surgery and stomach and intestinal surgery, which came into the field as almost new procedures for new disorders, born of aseptic methods and untrammelled by long years of unsuccessful effort, and for this reason were more readily accepted.

It is different with the poor prostatic, with his frequent and painful urination, his anxious look and emaciated body. He has had his prostate tunneled;¹ has had it perforated with a lance-shaped stylet;² has suffered the torture of systematic compression;³ has been subjected to incision as an emergency procedure for retention of urine, or has had his prostate accidentally⁴ incised during perineal lithotomy; has had hard

* Read before the Section on Surgery, Illinois State Medical Society, at Springfield, May 15-17, 1906.

1. John Hunter: On Venereal Disease; works edited by Palmer, London, 1835, vol. ii, p. 279. Sir Everhard Home: On Tunnelling the Prostate, Trans. Philos. Soc., Lond., 1805. Sir B. C. Brodie: Works, Lond., 1865.

2. Chopart: Traite des Maladies des voies Urinaires, Nouvelle Ed. Paris, 1830.

3. Physick: Dorsey's Surgery.

4. Sir Henry Thompson: Disease of the Prostate, London, 1853. Gouley: Trans. Am. Surg. Assn., 1885. Chopart: Traite des Maladies des Voies Urinaires, Nouvelle Ed. Paris, 1830. Sir Wm. Bozzard: By Guttrie, 1806.

tumor masses twisted off, supposedly from the bladder, during such procedures. He has had prostatic and periprostatic abscesses opened and portions of the prostate cut away with the expectation that the remainder of the hardened area would then be absorbed. He has had his prostate incised by instruments introduced through the urethra;⁵ he has had his prostate subjected to the cautery,⁶ and the cautery has also been applied extensively through suprapubic and perineal incisions. His bladder has been tapped and continuous catheterization⁷ has been established, and this has been combined with urethral incision⁸ of the prostate; he has had his bladder punctured by the suprapubic route, the perineal route and the rectal route, and urinary fistulae have been established;⁹ numerous improvements in the manner of making the fistulous opening, especially the suprapubic, have been introduced.⁹ Perineal fistula and drainage with prostatotomy has been extensively tried¹⁰ and met with considerable favor. In addition to having his prostate and bladder incised and punctured in various directions and in many ways, the prostatic came in for a large amount of effort at local treatment by medicines and otherwise. Injections of iodine,¹¹ ergotin, etc.,¹² directly into the prostate, as well as parenchymatous injections through the rectum have been tried. The prostate has had a full share of electricity,¹³ and the obstructing parts have been excised¹⁴ and various partial methods have been tried until finally a prostatectomy was made.¹⁵ Even then the poor prostatic had to be carried through a long series of trial procedures, all more or less unsuccessful, and yet all leading in the direction of complete enucleation.¹⁶ Ever since the introduction of the procedure of enucleation the fate of the prostatic has been partly lost sight of in the controversies as to priority and the comparative value of methods so similar that the ordinary medical man sees no material difference between them, and several years have been consumed in trial methods of enucleation, both suprapubic and perineal. The prostatic in the meantime has gone through many experimental operations, as ligation of the internal iliacs, castration, vasectomy and others too numerous to mention, each having an element of usefulness. If it was not for the fact

5. Guthrie: *Anatomy and Diseases of the Neck of the Bladder and Urethra*, London, 1834. Mercier: *Recherches sur le Traitement des Maladies des Organes Urinaires*, Paris, 1856. Gouley: *Trans. Am. Surg. Assn.*, 1885.

6. Bottini: *La Galvanocaustic mella Practica Chirurgica*, Novara, 1873. Freudenberg: *Berliner klin. Woch.*, 1897. Young: *Jour. Amer. Med. Assn.*, Jan. 11, 1902. Meyer: *N. Y. Med. Rec.*, 1898; *Trans. Am. Surg. Assn.*, 1903. Horwitz: *Phil. Med. Jour.*, 1901. Watson: *The Operative Treatment of the Hypertrophied Prostate*, Boston, 1888. Bangs: *N. Y. Med. Record*, 1901. Bouffleur: *Annals of Surgery*, 1902.

7. Everhard Home: *Trans. Philos. Soc.*, London, 1805. Physick: *Dorsey's Surgery*.

8. Parrish: *Practical Observations on Strangulated Hernia and Some of the Diseases of the Urinary Organs*, Phil., 1836. Thompson: *Lancet*, 1875. Keyes: *Surgical Diseases of the Genito-Urinary Organs and Syphilis*, New York, 1883. Edwards: *Med. Times and Gazette*, London, 1885.

9. McGuire: *Trans. Am. Surg. Assn.*, 1888. Morris: *N. Y. Med. Jour.*, 1890.

10. Harrison: *Brit. Med. Jour.*, 1881. Whitehead: *Brit. Med. Jour.*, 1889. Braun: *Centralbl. f. Chir.*, 1885.

11. Heine: *Archiv. f. klin. Chirurg.*, 1874.

12. Iversen: *Hypertrophia Prostate*, 1874.

13. Morean-Wolf-Cheron and Morean-Wolf.

14. McGill: *Trans. Chir. Soc., Lond.*, 1888.

15. Belfield: *Jour. Am. Med. Assn.*, 1887.

16. Freyer: *Brit. Med. Jour.*, 1901, 1902, 1903 and 1904; *Stricture of the Urethra and Hypertrophy of the prostate*, 1902; *Lancet*, 1904.

that medical men, as well as the people, have been trained, for untold generations, to take drugs, it would be perfectly plain that long ago we have allowed the palliative treatment to go to seed. In fact, little or no distinction has been made between palliation and cure. Copaiva, saw palmetto, oil of sandalwood, pichi, buchu, bromids, ergot and many other drugs have a limited range of usefulness as palliatives, but we should draw a sharp distinction between palliation and cure. When it is evident that conditions are growing worse; that the residual urine is increasing; that the frequency of urination and pain are debilitating the patient; that the integrity of the whole urinary system is threatened and that a choice must be made between frequent and painful, dribbling urinations or catheter life and surgical intervention we should not fail to advise timely operation, unless positive contraindications exist.

The principal steps in the development of the surgical treatment of hypertrophy of the prostate are mentioned to show the peculiarly unsatisfactory path which has been traversed in arriving at a rational method of operating and to emphasize the discouraging effect which all this has had on the mind of the profession and of the people. Is it any wonder that even some of the best men in medicine are slow to believe that we have finally reached something worth while for these miserable patients? Are the surgeons and specialists sure that the value of present procedures is proved and does the surgical work of the past three years stand out as a clear and convincing argument in favor of the value of such operations? The older men are discouraged by the many failures of the past and most of them will be unable to develop confidence in the present work. All that the specialists and surgeons say will have little practical effect. It is a sad fact that many important advances must await the passing of a generation before they come into full usefulness. Elaborate papers by investigators and specialists have their place in collecting and presenting the conditions and methods of progress. The work of the surgeons proves the usefulness of the procedures and furnishes the statistical results, but all of this is of little avail against the old prejudice toward surgery in general and toward prostatic surgery in particular. This is especially true as to the man who has never dissected the perineum, or perhaps has never seen a human prostate enlarged or otherwise, and, sad to relate, these men are a majority in the profession to-day. A number of surgeons of wide experience who depend entirely on cases referred by brother practitioners for their surgical work have told me that they have never had a case with an enlarged prostate referred directly for operation by a general practitioner, but have frequently had patients refuse operation on account of adverse advice from their family physician. It would be a great error to conclude that such advice was not honest, or even that it had any element of selfishness or malice in it. It is a question of education as well as of point of view.

The modern surgeon, after traversing a maze of trial and experiment, has finally emerged into the open of satisfactory methods, which it is believed the test of time will approve. He is beginning to have a goodly

number of statistics to fortify his claims. If the problem for the prostatic has in the main been solved, as many believe it has been, how are we, as surgeons and practitioners, to give the man with the enlarged prostate the benefit of such a procedure? The improved and successful methods of operating and curing these cases will be of very limited value until they receive the endorsement and support of the general practitioners. The important thing to the patient with an enlarged and distressing prostate is that his doctor should not only know about these improved operations, but that his doctor should be sufficiently convinced of their value to recommend them in his case. Otherwise, as far as the individual patient is concerned, there is nothing gained. It is self-evident that before any considerable proportion of these cases can be reached there must be a hearty coöperation between the family physician and the surgeon. Given a patient in just that stage of prostatic embarrassment where his physician is about to advise him to supply himself with a catheter and begin catheter life, how can that practitioner be weaned away from routine palliative measures and give to each case an independent study? While all must admit that some cases are only amenable to palliative treatment, it is time that this class should rapidly grow smaller. The only way to advise the patient properly is to thoroughly examine him first. The practitioner who can be induced to examine all his cases thoroughly will, of necessity, study each one. The subject will interest him and he will begin to read up, and will soon discard routine palliation and replace it by rational advice. After exhausting the list of hygienic and therapeutic remedies, instead of advising his patient to begin catheter life, he will give him the more rational advice of a timely operation, if his case is one which is suitable for operation, and most cases, if taken early, can be relieved by operation. Has the work which has been done carried that conviction into the profession which would be expected from it, or has this work been so unsatisfactory that it does not deserve the endorsement of the general practitioner? There is no doubt that the work would carry this conviction, if it could be fully understood. There is almost no field for surgery where success has been attained amid greater obstacles than in surgery of the prostate. Most of the cases operated on have been far advanced and complicated, and the results are far from what they would be, if cases were selected and operated at the proper time. In this field, as in others, the result will improve in proportion as cases are referred early. Operations performed as a last resort, after all other measures have failed and when it is evident that the patient will soon die, never give to surgery a "square deal" and are no credit to the care and advice of the family physician.

The problems arising between the general practitioner and prostatic surgery are not peculiar to this field, excepting that here the prejudice is more marked than in some others, but the problems of education are the same. Our postgraduate schools are doing a good work, but they are for the most part far away in the large cities and, at best, only reach a small number of men. Unfortunately, most of these are out more to

see the sights of surgery than for serious postgraduate study, and the practical results are comparatively small. The time has come when the medical man must take the study of medicine more seriously. The profession is just beginning to be impressed with the rapidity with which we fall behind, if we do not keep up systematic study of the advances as well as of the established fundamentals. The time has come when every county medical society should convert itself into a local postgraduate school, and, instead of assembling once a month to listen to textbook essays, should meet once or twice a week for regular study, with duly appointed teachers who have prepared themselves on the subject assigned. There is no county society in this state which can not establish such a course, to the great advantage of all and, above all, to the sick and suffering, who entrust their lives to our care and who are relieved, or cured, or drag out a miserable existence and go down to an early grave, according to whether he has a doctor who is alive and abreast of the times or one who looks on with wise inefficiency.

One can hardly overestimate the result, if each county society in this state would establish these local study courses, with six or eight evenings devoted to the prostate, its anatomy, its pathology and its treatment. There is no county society which can not have a subject for dissection. Dissect the perineum and learn its landmarks. Know where the prostate is located and its relation to the bladder, the urethra, the seminal vesicles and the rectum. See what causes the irritation and the obstruction, and just where and how these conditions are brought about. Replace hypothetical and symptomatic knowledge with a real knowledge of the local anatomy and pathology of the structures involved. Then the symptoms presented by our miserable prostatic, who is evacuating his bladder every hour, day and night, will begin to have a different meaning, and, instead of giving him a catheter and advising him to carry infection into a viscus, which is already only half drained, and allowing that infection to involve the whole urinary apparatus and finally destroy our patient, we will examine him carefully, determine the exact conditions, and, if they are such as to be safely and successfully reached by surgery, advise him early to have the obstruction removed, thereby making him again comfortable and useful and prolonging his life.

Technical papers before our societies and in our journals, by specialists and surgeons, are the essential basis of progress, but practical papers by our prominent internists, advocating early operative interference, carry far more weight with the general practitioners, who sometimes suspect the surgeons and specialists of being special pleaders.

Both of these combined with the work of the postgraduate schools, have comparatively small influence with the great body of practitioners who read few books and journals and attend few societies, excepting the ones in their county or town, and are very irregular attendants at those. A more far-reaching and comprehensive plan of study must be developed if practical coöperation in keeping abreast of the times is to be attained. Every county society must resolve itself into a school for serious study of the problems of rational diagnosis and treatment. Only in this way can

we hope to eradicate prejudice and empiricism and establish in its place a working knowledge of practical progress and furnish to the sick and suffering rational and unselfish advice. The time has come when the people, as well as the members of the profession, should understand that the physician who does not study and associate himself with his colleagues for the purpose of keeping abreast of the times can not be safely entrusted with the serious problems of disease. The man with an enlarged prostate has a right to advice based on a knowledge of anatomy, physiology and pathology, as well as the most advanced procedures and their results.

THE PRESENT STATUS OF THE BOTTINI OPERATION FOR THE RELIEF OF PROSTATIC OBSTRUCTION.*

F. KREISSL, M.D.

CHICAGO.

The resurrection of the Bottini operation by Freudenberg's modifications of the apparatus and technique in 1897, marks the milestone between—what I may call in the vernacular of the English language—"prostatic embarrassment" and "frenzied surgery." Before this epoch much confusion existed, not only regarding the treatment of prostatic obstruction, but also much uncertainty concerning its etiology and diagnosis. If for no other reason, we should at least feel indebted to Freudenberg for having caused investigations and discussions which resulted in clearing the situation, and putting the question of prostatic enlargement, its diagnosis and proper management, on a solid foundation. And I think I do not exaggerate when I say, the conservative advocates of prostatectomy have received many inspirations from the battle which was waged for and against the Bottini operation, from its results, its failures and its apparent limitations.

In order to properly appreciate the present position of the Bottini operation, a few words on its origin, its development and its underlying principles are required. In the middle of last century Mercier advocated the bloody division of the obstructing portion of the prostate through a perineal opening—prostatotomy—a procedure uncertain in its results, because the linear cleft closed soon after it was made, and dangerous on account of the profuse hemorrhages and impending urinary infection. Early in the seventies Bottini introduced the galvanocaustic prostatotomy "per vias naturales" with specially designed instruments. Inadequacy of the electric supply and of the incisor, and consequently an inferior technic did not permit of many satisfactory results, and prevented the method from becoming popular. Freudenberg's clever modifications of the incisor, the electric supply and the surgical technic in 1897 were followed by much better results which in turn engaged the active interest of the profession in the disease, in its pathology and in its management.

* Read before the Section on Surgery, Illinois State Medical Society, at Springfield, May 15-17, 1906.

The underlying principle of the operation differs materially from prostatectomy. In the latter the whole gland is removed; in the former the obstructing part or parts of it are divided by the cautery blade of the incisor. The point of attack is around the vesical neck. The cautery blade in its downward movement burns a deep cleft in the vesical protrusion, which increases in width and depth as the eschars are thrown off. This is the result of galvanocautery, whose effect is not limited to the contact surface but radiates more or less into the tissues for one-fourth of an inch and more in all directions. Sepsis by absorption is not to be expected if the bladder be thoroughly cleaned before the operation and the urine, as far as possible, sterilized by the urinary antiseptics given internally for a while preceding the operation. During the incision the heated blade forestalls septic infection of the wound, and afterwards the solid eschar will prevent this accident. Hemorrhage should not be looked for if the operation be properly done.

Originally Freudenberg used the cautery blade at red heat. After my second operation early in 1898, I concluded that too much heat was given up to the tissues by the blade to securely seal the blood vessels with a solid eschar and I employed and advocated a white heated blade. Since then scarcely anything has been heard of alarming hemorrhages, and more satisfactory results—due to a deeper and wider cleft—were observed. This cleft virtually represents a breach in the prostatic protrusion resulting in a free communication between the urethra and the retroprostatic pouch, or the vesical cavity as a whole, as the case may be. Oftentimes free urination in a good stream follows immediately upon the withdrawal of the instrument, sometimes where complete retention existed for years and the bladder has become overdistended or contracted and weak, the improvement is gradual, the amount of residual urine decreasing, and spontaneous urination increasing in quantity from day to day.

In my earliest publications I advocated leaving a catheter in the urethra for the first few days following the operation, in those cases in which the bladder does not completely empty itself immediately after the incisor is removed. This is preferable to the repeated catheterization which eventually becomes necessary, due to the reactive swelling around the wound, lasting from two to four days. Under such conditions catheterization is not only extremely painful and sometimes even impossible, but these frequent manipulations disturb the eschar, causing profuse bleeding and secondary infection of the prostate and testicle, as we usually encounter a more or less infected urinary tract and contaminated urine. The eschar comes off in the second and third week and blood appears in the urine at this time. It is a granulation hemorrhage, usually does not amount to much, and if alarming can—as I have practiced it for years—always be checked by placing a catheter in the bladder. An empty bladder, for anatomical considerations, is about the best hemostatic in most hemorrhages from its cavity and from the prostatic urethra. General anesthesia to perform the operation is not only not necessary, but considering the class of patients operated on, not desirable.

A 2 per cent. cocain-adrenalin solution deposited at the vesical neck and along the urethra is sufficient to insure relative comfort for the patient for an operation which, according to the number of incisions, takes from three to ten minutes. Rest in bed for a few days following the operation, unless other conditions or complications should demand a longer confinement, is all that is necessary. This point is especially valuable as the old enfeebled patients are only too susceptible to pneumonia and other serious troubles arising from an enforced recumbent position of long duration. It is but natural that coming at a time when prostatectomy was in its infancy and had a very poor showing both in its final results and its mortality, the rejuvenated and improved Bottini operation should and did attract widespread attention and interest. An operation with a mortality rate much lower than any other performed for the same purpose; an operation not requiring the much dreaded anesthetics, and if properly performed not attended with the dangers of hemorrhage, urine infection and general sepsis, not followed by fistula, impotency, and hardly ever by incontinence, offered great possibilities. Add to it the short confinement, the visible and rapid restoration of the urinary function, the cessation of gastrointestinal troubles and last but not least, as the patient views it, the elimination of the knife; and one can easily understand the enthusiasm which the method aroused everywhere, and also the numerous operations which it invited and many of which should never have been performed.

"Improvements" of the improved instrument, the technic and the electric supply, came thick and fast; just as we saw it in prostatectomy. Some proved of material value, most of them had none at all, others were really dangerous. Most, if not all of them, I have discussed in my publications years ago, and I mention here but a few. In the preparatory stage camphoric acid—introduced by Freudenberg—is given in doses of fifteen grains three times daily, as a urinary antiseptic instead of urotropin. It seems to be very effective in preventing urethral fever and does not cause vesical irritation, as urotropin does sometimes. When the urine is ammoniacal iodoform suspensions are injected for a time preceding the operation until it has become acid. This prevents premature softening of the eschars, postoperative hemorrhage and the formation of phosphatic concretions on the raw wound surface. The employment of the street current with a converter and amperemeter—advocated by Frisch in Vienna—instead of the portable batteries eliminates the disturbing and dangerous inconstancy of the electric supply from storage cells. In order to distend the bladder before operating, 100 c.c. of water or an antiseptic fluid is used, the purpose of which is to prevent a bladder fold at the vesical neck from being caught by the cautery blade. Bransford Lewis, calculating that the water surrounding the blade takes away too much of its heat, employs air instead. The idea is a very good one where one has to rely on storage cells, but may be dispensed with where the street current can be employed. Since the cystoscope proved of material assistance in diagnosing the vesical protrusions and also complications such as trabeculi, diverticuli, stones and tumors,

it is but natural that it was employed as a valuable aid in the prognosis and for exacter work in the Bottini operation. So for instance may a perfect result be predicted in the absence of all vesical complications or an imperfect one in an advanced hypertrophy of the bladder wall or in the presence of several or large diverticuli. A cystoscopic survey will contraindicate a Bottini operation in the presence of—otherwise not detectable—vesical calculi which for certain reasons are not amenable to a lithotripsy, such cases being suitable for prostatectomy. Yet under favorable conditions lithotripsy can be performed preceding the Bottini operation. In a patient seventy-two years old, referred to me by Dr. A. C. Crofton, of Chicago, I crushed a uric acid stone 6 ctrs. long and 4 ctrs. wide and performed a successful Bottini operation a week afterwards. The cystoscope is indispensable with a well planned cautery incision. In this connection I think I was the first to point out the necessity of placing the incision in the protrusion as recognized through the cystoscope instead, as it was customary to make three conventional incisions; one in the middle lobe, one in the right and one in the left, without knowing which one caused the obstruction. Yet there are surgeons who are opposed to cystoscopy in prostatics; some claiming it can not be done, and others because they consider it a dangerous procedure. If done by experts it is harmless, and cases in which a cystoscope can not be passed on account of the enormous size or the peculiar configuration of the protrusions in the prostatic urethra and around the vesical neck are not suitable for the Bottini operation, but for prostatectomy. For the same reason I do not approve of modified incisors in which the cautery blade is higher than $1\frac{1}{2}$ ctrs. or which allow an incision longer than 3 ctrs., the original Freudenberg scale. Cases presenting so much or more elongation of the urethra as to require such deep or long incisions will not be benefited by the Bottini operation, no matter how long or how deep the incision be made. Various alterations and modifications of the wheel and screw and substituting a rack gear or rod pulled downwards by the fingers have only assisted to emphasize the value of the original Freudenberg instruments. None of them represent a real improvement, most of them are a step backward. The principal of combining cystoscopy and cauterization in one instrument, as it appears in the Bierhof Freudenberg and Wossidlo cystoscope-cauterizer, constructed a few years ago, owes its conception to the objection of some surgeons to operate in the dark and to the desire to place the cautery blade exactly at the apex of the protrusion and follow its course through it.

I have demonstrated that the success of the Bottini operation does not depend on this point, but on the cleft being established somewhere in the protrusion deep and wide enough to open a free communication between the urethra and the bladder. The cystoscope, while of material value before the operation, is during its progress not only unnecessary, but it is impracticable. The introduction of the voluminous cystoscope cauterizer in the bladder over the much congested prostate, is followed by so much bleeding that a clear view is barely possible, and even if it were so the blade disappears from view as soon as it approaches the pro-

trusion. The fact that Freudenberg used it but once speaks for its questionable merit. For the purpose of maintaining the proper position of the beak in its relation to the protrusion to be incised I devised and use an arm rest placed between the patient's legs.

Disappointing is the number of patients having a recurrence of the symptoms of obstruction, after a longer or shorter period of apparently free and more or less perfect urinary function. I have observed them as early as five months after the operation, and as late as four years; and it was my privilege to first call the attention of the profession to this fact in a paper presented at the annual meeting of the American Urological Association, in Saratoga, June, 1902. This recurrence of the symptoms of obstruction is not surprising considering the progressive character of the trouble. A limited galvanocautic incision can not be expected to completely eradicate a possible tendency to hypertrophy of the rest of the gland. Freudenberg's statistic shows twenty-one relapses in eighty-five operated cases, about 25 per cent. Of these appeared: 13 after 1 year, 4 after 2 years, 1 after 3 years, 2 after 4 years, 1 after 6 years.

I am ready to concede that the thoroughness of the cauterization has a good deal to do with the ultimate results and that relapses are less frequently observed as the technic and experience of the surgeon improves. But this is not sufficient to explain away the cases, which I have observed, in which the relapse, i. e., obstruction, was due to a lobe which at the time of the operation appeared normal. It would mean killing the calf to save the fly if we should follow his advice to make multiple cautery incisions in order to prevent a possible relapse. Extensive cicatrization and serious damage to the vesical sphincter are bound to follow such desultory procedures. However, in the event of a relapse, the battle is not lost, because the operation may be and has been successfully repeated. On the other hand, it must be admitted that the scars left by an unsuccessful Bottini operation may eventually seriously handicap a subsequent "prostatectomy" on account of profuse hemorrhage, due to the then unavoidable extensive destruction of the capsule. But if the indications for the Bottini operation are narrowed to the limitations which I tried to point out several years ago, these incidents would rarely if ever occur.

First.—Cases of very old emaciated patients, who cannot endure the shock of a general anesthetic and a prostatectomy, or patients with advanced heart and kidney lesions. A moderate infection of the upper urinary ways is not a contra-indication. Obviously, all these subjects will not live long enough to have a recurrence of the obstructive symptoms, and most if not all of them will find relief for the rest of their life with the least possible risk.

Second.—Third group of patients on whom Bottini operation may be performed are those who although younger and in good physical condition and therefore suitable subjects for prostatectomy, will not consent to it on account of the greater risk connected with the operation, and the strong probability of becoming sexually incapacitated.

Third.—Patients presenting what Chetwood calls symptoms of prostatism without a prostatic enlargement. In these cases the obstruction is caused by a fibrous infiltration of inflammatory character around the vesical neck. They show urgent and frequent urination, pain during and after the act and partial or complete retention of urine. But as a rule the prostate is of normal size upon rectal palpation, and the urinary distance—a distance from the cut of muscle to the vesical sphincter—is not at all or but slightly increased. Most likely the failure to relieve by prostatectomy, the symptoms of urinary obstruction in many cases is due to the failure to recognize this sclerosis of this vesical neck as the real cause, and perhaps others recorded as prostatic-hypertrophy successfully operated and permanently relieved by the Bottini operation were actually such cases of sphincter contraction.

Just now where prostatectomy is being overdone, where the strict advocates of one route are ferreting out the weak points of their opponents of the other route, a reaction is due, and I should not be surprised to see the more conservative element in the profession turn around and pay more attention to the Bottini operation. For this reason a more detailed statistic would be desirable. It should include the following data:

First.—Number of cases operated in first, and each consecutive year.

Second.—Age and condition of the patient at the time of the operation—with special reference to the condition of the circulatory apparatus, the kidney and the bladder.

Third.—The urinary distance, respectively the size of the protrusions.

Fourth.—The bacterial flora of the urine before operation.

Fifth.—The quantity of residual urine, and frequency of urination before and after the operation.

Sixth.—Time elapsed between the operation and last examination.

Seventh.—Number of perfect results, failures, relapses and deaths recorded separately from each year.

In this way it would be possible to more accurately determine:

First.—Which cases are suitable for the operation.

Second.—To what extent is Freudenberg's contention as to the cause of the relapse and failure correct.

Third.—It would conclusively demonstrate that the operation is a conservative surgical method for the relief of prostate obstruction, practically harmless, and should not show any mortality under certain conditions which are:

First.—A perfectly functioning apparatus, electric supply, incisor, etc.

Second.—An operator familiar with cystoscopy, experienced in litholapaxy and in the manipulating of instruments in the bladder.

Third.—A thorough pre-operative preparation of the patient constitutionally and locally, and careful post-operative attention.

Fourth.—Exclusion of all cases of urosepsis, of far advanced kidney lesions from any cause, and of cases in which the urine harbors streptococcus or the proteus of Hauser.

SUPRAPUBIC VERSUS PERINEAL PROSTATECTOMY.*

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There are three recognized operations for the enucleation of the hypertrophied prostate: perineal, median urethral and suprapubic prostatectomy.

1. Perineal prostatectomy was proposed by Dittel in 1890. The prostate is removed through its posterior surface, which is exposed by an extensive transverse incision or dissection of the perineum, the particular form of skin incision, whether transverse, curvilinear, inverted V-shaped or other being a minor feature. The extensive destruction of the perineal muscles and occasional sloughing of the rectal wall caused by this perineal dissection frequently entailed disastrous sequelæ—notably perineal and rectal fistulæ (in about 8 per cent. of 2,000 cases operated), permanent incontinence of urine (about 3 per cent.), severe stricture of the perineal urethra (about 7 per cent.), besides minor ailments, including epididymitis and impotence. The latter, the loss of erectile power which so often follows this operation, results not from the loss of the prostate—which is not essential to erection—but from destruction of the perineal muscles, which are necessary to complete erection. Removal of the prostate by suprapubic incision, by which the perineum is not damaged, is admittedly without effect upon the erectile function, as is its experimental removal from rats and other animals. Cure of the urinary retention occurred in about 50 per cent., death in 7 to 11 per cent.

Because of these disastrous sequelæ, perineal prostatectomy, which was revived and enthusiastically exploited by French surgeons from 1900 to 1905, is virtually lapsing into disuse in Europe; eminent American surgeons, who followed the French in praising it, have now also abandoned it.

2. Median urethral prostatectomy requires merely a simple median incision into the prostatic and membranous urethra, through which the finger is introduced into the prostatic urethra and bladder. With the finger nail or other instrument, the mucous membrane covering the prostatic tumor is incised, these growths are enucleated into the bladder and removed by stone forceps or scoop. As no damage is inflicted on perineal muscles or rectum, it is entirely free from the serious sequelæ—fistulæ, incontinence, strictures, impotence, etc.—that have caused the general abandonment of perineal prostatectomy. Cures have been about 60 to 70 per cent., mortality 3 to 5 per cent.

This operation is, when practicable, eminently satisfactory; but its field is restricted by the brevity of the average finger, which fails to enucleate the prostate, especially its middle lobe, when very large. Though the finger may be supplemented by appropriate instruments, yet there remain many prostates too large for safe removal through this incision.

3. Suprapubic prostatectomy, by which the prostatic tumors are made freely accessible to both eyes and fingers without damage to the

* Read before the Section on Surgery, Illinois State Medical Society, at Springfield, May 15-17, 1906.

urethra, is anatomically ideal. The clinical results have been, except in one particular, equally ideal. Restoration of the bladder function and freedom from all the distressing sequelæ of perineal prostatectomy have been the rule with but relatively few exceptions. The one serious exception to these ideal results has been the exceedingly grave one that the immediate mortality of the suprapubic has been markedly greater than that incidental to the other operations; this mortality has ranged from 10 to 15 per cent., about one-half greater than that of perineal prostatectomy (7 to 11 per cent.).

This relatively high mortality has been the only objection to the suprapubic operation, and is to-day the only excuse for the perineal prostatectomy; for were the mortality of the two procedures practically identical there could be no excuse for exposing the patient to a 20 per cent. chance of finding himself in a far more wretched condition after than before the operation. This is just what perineal prostatectomy does, while the suprapubic operation does not.

The excess mortality of the high operation is admittedly caused by septic infection of the suprapubic space and pneumonia; and these, in turn, result from leaking around the suprapubic tube and stagnation of urine in this space. While many ingenious devices, such as siphon drainage, the purse-string suture, perineal drainage, etc., have been used to prevent urine leakage and stagnation in this space, yet all has been found unreliable; leakage will occur, and septic fluids will not rise out of the wound against gravity. Yet there are two reliable methods for preventing septic infection of the tissues composing the suprapubic space, the first old, the second novel. They are: 1, to abolish this space by performing the operation in two stages, the first consisting of an incision to the bladder, the wound being packed with gauze; five days later, when this wound is protected from infection by granulation, the bladder is opened and the prostate removed. When these separate steps are performed under nitrous oxid anesthesia, the maximum of safety is attained. I have done 19 operations in two stages in patients over 60 years of age, without mortality. 2. The second, and original, method of preventing infection of the suprapubic space is by draining this space through the perineum. A small drain, tube or silkworm gut, is passed through an opening at the lowest point of the suprapubic space, at the posterior surface of the triangular ligament, out through the perineum, making an almost vertical exit for the gravitation of fluids; the suprapubic wound is closed without drainage. This I have done in 11 cases without a death attributable to sepsis.

Freyer, it is true, whose excellent results from suprapubic prostatectomy have largely induced its general adoption in Europe, has reduced its mortality to 3 per cent. (one death in 35 cases) without these precautions against sepsis; his only provision for drainage being a large tube in the bladder. Yet it would seem wise to employ every feasible precaution against so formidable a danger.

The present status of prostatectomy seems to me, therefore, to be as follows: The extensive dissection of the perineum necessary to reach the posterior surface of the prostate—perineal prostatectomy—has been

largely abandoned by the very men who championed it a few years ago. The choice lies between median urethral and suprapubic prostatectomy; the former safer and therefore preferable when the prostatic growths are small, the latter available for all cases. Since the differentiation is not always possible in advance, a perineal urethrotomy may properly be made for digital exploration; if enucleation can not readily be made, the suprapubic incision can be added, and the perineal urethrotomy utilized for a drainage tube, the upper wound being closed. Security against sepsis of the suprapubic space is procured by draining this space into the perineal wound. When the patient is notably feeble, suprapubic prostatectomy in two stages under nitrous oxid anesthesia seems to afford the maximum of safety.

The danger of sepsis from the suprapubic operation has been notably reduced by the use of urotropin (under its various names). The internal administration of this agent renders the urine a good antiseptic solution. Some surgeons, including J. B. Murphy, now consider the mortality of the suprapubic and perineal operations about equal.

CONTRIBUTION TO THE SURGERY OF THE PROSTATE.*

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If we correctly understand the unexpressed idea of the general medical profession concerning the damage wrought by an hypertrophied prostate, it is that prostatic troubles commence usually some time after middle life; that they are due to the encroachment of the constantly enlarging gland upon the prostatic urethra, thus more and more occluding its lumen, until the flow of urine from the bladder is greatly impeded or completely stopped, and that this mechanical disturbance constitutes the entire damage wrought by the hypertrophied prostate, all concomitant evils being due to septic conditions. Hence, the prevailing idea is that the removal of the prostate should cure all urinary troubles caused by it as quickly as the system recovers from the operation, which is usually about thirty days. The operation is adjudged skilful or unskilful, and the methods of the operator faultless or otherwise, according to the local condition at the end of this time. In other words, we believe that it is the opinion of a majority of medical men that an enuresis, or dysurea, due to hypertrophied prostate, which persists longer than thirty days after prostatectomy, is due to unskilled operating, or faulty methods of the surgeon.

It is one of the purposes of this paper to set forth facts upon which we shall base an appeal from this judgment, and to ask our brothers in the profession to consider these facts, with us, and change their verdict. To do this we should review, briefly, the anatomy of the urinary bladder, especially its musculature and nerve supply, and of the prostate body, both in their normal conditions, and in their relations to each other.

The prostate gland is located at the neck of the bladder. Its base is

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in contact with the bladder wall. It is enveloped by a dense fibrous capsule. Normally, its base measures about one inch transversely. The fibers of the detrusor urinæ muscle originate from the posterior surface of the os pubis and from the capsule of the prostate anteriorly. From this narrow origin they diverge, passing longitudinally over the anterior surface of the bladder to the fundus, over the fundus and back over the posterior surface of the bladder, converging, as they return, to be inserted into the capsule of the prostate, posteriorly (Fig. 1). The sphincter vesicæ has its origin and insertion in a raphe on the posterior surface of the bladder wall. It is an annular muscle surrounding the neck of the bladder, some fibers of which surround the vesical end of the prostatic urethra. It is in contact with the base of the prostate (Fig. 2). It is

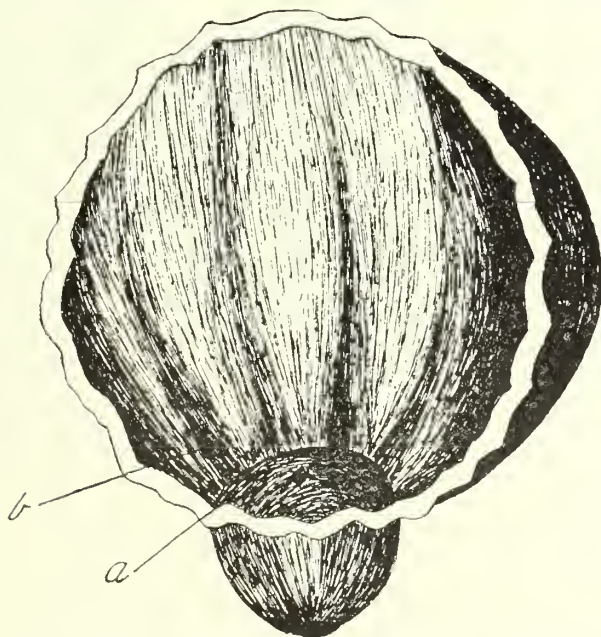


Fig. 1.—*a*, Base of normal prostate. *b*, Fibers of detrusor urinæ muscle, in normal condition.

somewhat misleading to use the term neck in connection with the bladder. The bladder really has no neck, or projection from it, such as we usually term a neck. The urethral outlet, and the structures about it, are called the neck of the bladder, but there is no projection of the bladder wall itself. The above muscles, at the neck of the bladder, are supplied with fibers from the vesical plexus of the sympathetic nerve, which accompany the middle and inferior vesical arteries, on each side of the vesical trigone, close to the posterior border of the normal prostate, and by branches from the third and fourth sacral nerves.

The physiology of the normal bladder is about as follows: The urine flows into the bladder (the bladder being in a passive state) until such a quantity has entered as to cause a stimulus to the nerve centers. This

quantity varies with different individuals. The detrusor urinæ muscle then contracts, forcing the urine directly to the urethral outlet. The sphincter vesicæ also contracts, and both muscles, working in unison, force the stream of urine into the urethra, and against the external sphincter, which surrounds the membranous urethra, known as the compressor urethra muscle. This muscle is controlled by cerebrospinal nerves, and is subjected to the will of the individual. The pressure of the urine against this muscle causes the desire to urinate, but the escape of the urine is controlled by the will of the individual, exerted through the nerves controlling this muscle, and aided by the action of the cerebrospinal nerves distributed to the walls of the bladder. By this arrangement, the individual controls the flow of his urine for a long period of time.

What deviation from the above occurs when the prostate enlarges? It is obvious that the fibers of the detrusor urinæ muscle, at their origin and insertion, must become separated, more and more, as this process continues. The gland often enlarges to four or five times its normal size. In such cases the fibers of the detrusor urinæ muscle, at their origin and insertion, are separated four or five times more than is normal. When this muscle now contracts, it does not direct the urinary current to the urethral outlet, as it normally did, but to a space four or five times as large, and, as there is no depression at the neck of the bladder, or trumpet-shaped mouth to the urethra, into which the urine flows, it is forced against the side of the bladder wall (Fig. 3). It is plain that a force applied, in this manner, to the volume of urine in the bladder, would be much less efficient in emptying the bladder than if it were normally applied. It would also be a potent factor in the formation of the sac, at the base of the bladder, in which residual urine collects in these cases (Fig. 4).

We know, by careful dissection, that there is a close connection between the fibers of the detrusor urinæ muscle and the fibers of the sphincter vesicæ. When the fibers of the detrusor urinæ muscle are spread out to five times their normal distance, the fibers of the sphincter vesicæ, to which the detrusor fibers are attached, are rendered inefficient. Their contractile powers are overcome. They can not perform their normal function, while those fibers of the sphincter vesicæ which are in contact with the base of the prostate are widely separated and greatly attenuated, and their function is impaired, if not destroyed. If there were no other disturbances than that to the musculature, produced in this manner by the enlarged prostate, dysuria would result. This might require of Nature more than thirty days to remedy, after the removal of the prostate.

The hypertrophied prostate is very susceptible to the influence of cold and wet, and, as a result, inflammatory or congested conditions are many times set up in it before the combined chronic enlargement and acute congestion or inflammation render the bladder completely inefficient. Lying as it does in contact with the sphincter vesicæ, and the detrusor urinæ, having its origin and insertion in it, this inflammatory process must

involve these muscles. Thus adhesions take place, binding all these structures together, and destroying every semblance of their normal action. Is it reasonable to conclude that Nature can restore these structures to their normal condition and function, in every case, within thirty days after the removal of the gland?

We have seen that the nerves which supply the muscles at the neck of the bladder, lie in close proximity to the normal prostate. When the prostate enlarges to four or five times its normal size, is it possible for these nerves to escape injury? It certainly is not, and we believe that to the injury done these nerves by the enlarged prostate, more than to any other cause, is due the cases of protracted enuresis following prosta-

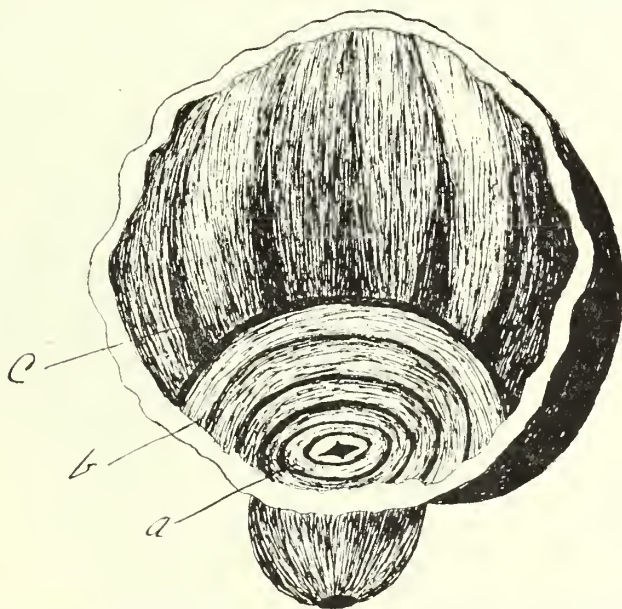


Fig. 2.—*a*, Sphincter vesicæ fibers in contact with base of normal prostate. *b*, Fibers of sphincter vesicæ in contact with fibers of detrusor urinæ muscle. *c*, Normal fibers of detrusor urinæ muscle.

tectomy. When we consider the pathologic conditions, which are inevitable consequences of some forms of hypertrophied prostate, we should not only be satisfied that Nature can not restore these organs, in every case, within thirty days after the operation, but it should be a matter of surprise that any of them recover so quickly.

Why do we advise and perform the operation of prostatectomy? Because the enlarged prostate has destroyed the normal function of certain organs by disarranging them, and by causing such conditions as render them useless, so that urinary troubles result. We take away this enlarged body, so that the organs it has crushed and distorted may assume again, as nearly as possible, their normal condition and function. We all know, if we think at all, that prostatectomy may not cure at once the troubles to relieve which it is done. It is not like an appendectomy, which re-

moves the offending organ in a few moments, and with it the whole trouble. When we remove the prostate gland, we only put the organs which are damaged in a way to recover, and then trust them to the good offices of time and Nature.

How many thousands of operations have been performed upon the male urethra and bladder, for different conditions, producing more operative traumatism than is ever produced by the skilful surgeon in doing a prostatectomy? And yet enuresis, or dysurea, is not a sequence of these operations. In view of these facts, is it just to charge the various urinary troubles, which sometimes persist for more than thirty days, after prostatectomy, to the operation?

If an hypertrophied prostate has so far destroyed the structures of the bladder as to place them beyond the powers of Nature to restore, they will remain in that condition after the prostate is removed. If the

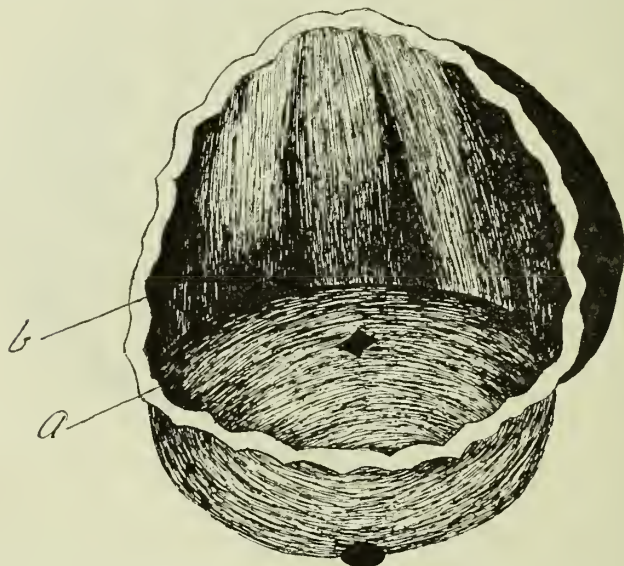


Fig. 3.—*a*, Base of hypertrophied prostate. *b*, Fibers of detrusor urinæ muscle widely separated at insertion due to enlarged prostate.

structures are only half-dead, when the prostate is removed, then the patient must bide his time until Nature can revivify them. Unfortunately, none can tell, before the removal of the prostate, how much damage has been wrought by it; neither can any one tell, in advance, except as he judges from past experience, how much, nor how little, urinary trouble will follow the operation.

I do not wish to convey the idea that all forms of this malady produce, upon the vesical structures, the same effects. We know they do not, but, in my experience, these forms which do not produce these conditions are not followed by postoperative urinary troubles.

What should physicians, in these cases, expect for their patients, from surgical procedures? It has been our custom, for comparative pur-

poses, to divide these cases into three classes, the segregation being based upon the physical condition of the patients when presented for operation. These classes are as follows: The partially incapacitated, the incapacitated, and the feeble. My observations herein are based upon thirty successive cases, and, I believe, faithfully answer the above query. Of these thirty cases, nine belonged to the feeble class. The degrees of feebleness varied from those able to totter about with a cane to one who could not, without assistance, turn in bed. Their ages varied from 60 to 80 years; catheter life, from 6 to 11 years; enuresis and dysurea, from 1 to 5 years. All were septic. Of these nine, one died, or $11\frac{9}{10}$ per cent. Five of the nine had postoperative troubles lasting longer than a month, or $55\frac{5}{9}$ per cent.

There were twenty-one cases in the other two classes of incapacitated and partially incapacitated. Two of these had postoperative troubles lasting longer than a month, or $9\frac{1}{2}$ per cent. In other words, there were not half as many cases, in the feeble class, as there were in the other two classes combined, but the per cent. of mortality and postoperative troubles lasting longer than a month is more than seven times greater in the feeble class than in the other two classes combined.

Basing our comparative estimates upon the thirty cases treated, we have the following: Nine, or 30 per cent., belong to the feeble class; one of these died, or $3\frac{1}{3}$ per cent. of the thirty treated. Five of the nine, or $16\frac{2}{3}$ per cent. of the thirty treated, had postoperative troubles lasting longer than a month. In other words, 20 per cent. of the thirty cases treated who died or had postoperative troubles belonged to the feeble class. In the other two classes, there were twenty-one cases, or 70 per cent. of the thirty cases treated, with no mortality, and only two cases, or $6\frac{2}{3}$ per cent. of the thirty cases treated, who had postoperative troubles lasting longer than a month.

The final outcome of the thirty cases is as follows: Died, $3\frac{1}{3}$ per cent.; well within one month after the operation, $73\frac{1}{3}$ per cent.; well within two months after the operation, 90 per cent.; well within four months after the operation, 93 per cent.; well within six months after the operation, $96\frac{2}{3}$ per cent. It is obvious from the above that if physicians would procure the best results, in this work for their patients, they should refer them to the surgeon before they reach the feeble class.

The attitude of the physician toward his patient is always one of helpfulness, but it is a question sometimes how he can be most helpful, or how he can apply his knowledge in such a way that his patients shall be best served and that he shall maintain his standing with his patient. Perhaps there is no condition in which perfect candor with the patient plays a more useful part than in these cases of hypertrophied prostate. The patient's knowledge of his condition is usually thrust upon him suddenly. The prostate gland has been enlarging for years, but unknown to the patient. Following an exposure of wet or cold, an acute inflammation or congestion takes place, in the enlarged gland, which occludes the urethra and prevents the flow of urine from the bladder. This condition had probably been repeated many times before in the diseased gland,

but up to this time the chronic enlargement and the acute congestion, or inflammation and congestion together, had not sufficiently enlarged the gland to occlude the urethra.

The family physician is now called to relieve this trouble, and the patient, for the first time, is made acquainted with his true condition. After relieving the patient, the physician should assume the rôle of a teacher. He should explain, in detail, the nature of the malady, the course it will run, and the dire effects it will produce if unmolested. He should condemn the use of the catheter, and point out why it is an instrument of danger. He should also impress the patient with the fact that

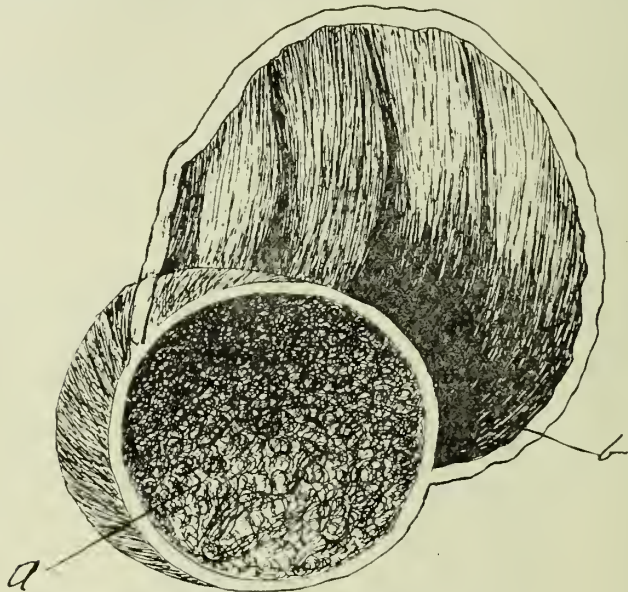


Fig. 4.—a, Sagittal section of hyperthrophied prostate and bladder. b, Sack formed behind enlarged gland in which residual urine collects.

therapeutics are useless, except as palliative. In other words, in this lecture, the physician should vividly and truthfully portray what the patient will, in all probability, experience as the malady progresses. By this procedure, the physician has placed himself in such an attitude with his patient that he can not criticise as his troubles multiply.

When this talk is finished, the patient invariably asks advice as to the best course for him to pursue. The attitude of the physician now changes to that of an advisor. Is there any question, at the present time, as to the best advice that can be given? We believe not. There is but one way to cure the trouble, and that is to treat the diseased gland surgically. There is no time which offers such good results as the present. Hence, the advice should be to have the gland treated at the first possible moment. About 80 per cent. of the cases thus handled will submit to surgical treatment.

About $33 \frac{1}{3}$ per cent. will seek the operation at once, or in a short time. This class of cases are in the best possible condition, and will re-

ceive all the benefits from the operation, within the shortest time, and with the least possible risk. The mortality in this class will not exceed one-half of 1 per cent., and the postoperative troubles should be none. Thirty-three and one-third per cent. of the 80 per cent. who will have the operation will postpone the work until they have demonstrated the truth of the lecture they have received, and will then accept the situation and have the gland treated usually while they are in good condition. The mortality in this class should not exceed one-half of 1 per cent., but in my cases the postoperative troubles have reached $6\frac{2}{3}$ per cent. This I believe to be a fair estimate.

The remaining $33\frac{1}{3}$ per cent. will enter the feeble class and will present themselves for the work under the most unfavorable conditions. In this class, a mortality of 12 per cent. may be expected, with 50 per cent. of postoperative troubles, lasting longer than a month after the operation. This should not deter us, however, in our work in this class, for all will succumb to the condition, after a painful existence of a few months, without the operation. If we can restore to health and comfort eighty-eight out of every one hundred of these sufferers in this class, we are doing a commendable work.

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DISCUSSION.

Dr. William Fuller, of Chicago:—I did not expect to be called on to discuss these papers. There is one point, however, on which I would like to speak, and that is with reference to the demonstration made by Dr. Murphy and so well explained by him. He called attention to the fact that, when the enlargement of the prostate gland is outside of the bladder, its removal could be best effected through the perineum; but, when thoroughly enlarged within the bladder, the suprapubic route would prove the preferable one. This all seems well enough, if we were always able to make perfect diagnoses regarding the size, and more particularly the direction of the enlargement. But the real question is, how often can we do this with exactness? In what per cent. of these cases will we find a gland enlarged wholly within or without the bladder? How many of these cases will show the enlargement of this gland as described by Dr. Murphy? In my experience, it is seldom seen. It is, as a rule, intra- and extra-vesically enlarged, and rarely presents very striking exceptions to this. I believe that in very few cases the gland can be best removed by the abdominal route, provided the abdominal wall is not too prominent or thick; but it is more accessible from below, while it must be admitted that adjacent structures are more likely to suffer injury in the removal of the gland by this route. I believe it to be a mistake to remove the prostate piecemeal, or by morcellement, as it is sometimes called.

With reference to what Dr. Kreissl has said regarding the treatment of these cases by the Bottini method, I believe that there are, perhaps, a few cases amenable to that treatment; cases which are greatly improved, if not entirely cured by it, and in which no other operation should be done. Again, there is a class of cases in which there is very pronounced increase in size of the prostate, attended by the usual manifestations for the relief of which no operation should be done. To the man who has made it a rule to remove every enlarged prostate presenting the now well recognized symptoms of this condition, this will not appeal; but palliative measures carefully selected and intelligently and persistently applied, will not fail to bring relief to the majority of the properly selected cases. If the plain facts regarding the post-operative sequelæ, in a large number of prostatectomies, are put to these patients, the importance of the palliative treatment, and the good to be derived from it, will be easy to impress

on their minds. The so-called catheter life of to-day is no more like that of twenty years ago than is the surgery of the present and past. Properly and patiently used, supplemented by dietary and all other hygienic measures, palliation offers a more comfortable existence to many old men than can possibly be provided by any operation. There is not a surgeon to be found who would not gladly accept any conservative treatment that would hold out the least possible hope of improving his own condition in an affection of this kind, and, certainly we are not just in offering to these sufferers as the only alternative, measures which we would never consent to except as a last resort.

Dr. Carl Beck, of Chicago:—The subject of prostatectomy has been so thoroughly discussed that very little remains to be said, except that I desire to call attention to one point which Dr. Belfield would have mentioned if he had been here, and that is the condition of patients which may be called the feeble class, or which may be called the infective class. They are very weak; their vitality is lowered from infection, and these patients can be improved materially by instituting permanent drainage suprapubically before removing the prostate. This method is analogous to removing an abscess of the appendix before removing the appendix itself. I have had patients of this class within the last year, two of whom have come to me in a very low, feeble condition. By permanent drainage their condition so improved that operation was successful, which, in the first place, would have been fatal if they had been operated on during the septic condition.

Dr. Frederick A. Leusmann, of Chicago:—I have not had much experience with prostatectomy, for a little over half a dozen cases I count no experience, I shall content myself with making a few general remarks. We have listened to glowing reports of success. There are three kinds of reporters. There is the objective and truthful reporter that gives true, operative results and ultimate effects. Then there is the reporter who is honest in making his report, who is sincere, but who is deluding himself. His reports are just as false as they can be, but he is sincere. His reports are more or less worthless. Then, we have the commercial reporter. His reports are not what he claims them to be, but for the purpose of advertising himself, for commercialism, to get the country doctors to send him business, he says that his successes are marvelous; that his percentage of failures is at the lowest possible point. Since that is so, in the nature of things it is difficult for us to place statistics where they ought to be. You all know that not very long ago, when we first began to fool with the prostate—I say fool, because we are still fooling with it, and because there is no harmony—every one started to grind his own little ax. Perhaps he is grinding it now. I don't know. But there is a marked disagreement with reference to prostatectomy, particularly its early performance. I want to know if these men, who are ever ready to remove the prostates of their patients, are likewise ready to have their own cut out at the first sign of trouble. A thing may be true in theory, but that does not make it true in fact. If we believe those who remove the prostate suprapubically, they often obtain marvelous results. Dr. Murphy brought out the point that Freyer had been lying. He had to retract his statements. If I make a statement that is not true, it is, in plain English, a lie. Freyer was lying. The suprapubic operation was not everything it was represented to be. Then the Bottini operation came into vogue. I do not know whether Dr. Murphy is right or not, but he seems reasonable when I listen to what he has to say. What he has said is very good. When I listen to Dr. Ferguson I am almost ready to worship at his shrine; and in listening to Dr. Fuller his points were very well taken. He brought out that some times or often the beautiful, typical cases mentioned by Dr. Murphy did not turn up. The prostates stuck out a little more each way; some times the other way or any way. Therefore, you conclude the radical operation is a good thing, and you keep doing prostatectomies; and for all that I know that may prove to be the right principle. Some time in the future, it is hoped this problem will be solved, but at the present time we are still working at it.

Dr. Carl E. Black, of Jacksonville:—I think the last speaker has well illustrated what I said in my paper, that the genitourinary practitioner is on both sides of the fence, or he is under the fence in regard to this question of prostatectomy. We should study the best methods for relieving this condition, and apply them in suitable cases. I think it can be said with perfect candor that the average general practitioner has not carefully studied this condition. He does not know of what it consists, how it is brought about, what it is, and how it can be relieved. It seems to me perfectly plain that if we have an obstruction, the thing to do is to remove it. Naturally, until each one of us looks into this matter and sees it as it is, sees it for himself, there will be little progress made. The specialist and surgeon in reading papers do little for the prostatique himself, for the man who wants to be relieved, and unless this matter is considered by the average general practitioner and is made plain to him, there will be comparatively little accomplished. That can be done by systematic study of this subject. That is perfectly plain, and the place to do that study is at home among ourselves, in our county societies, by organizing postgraduate courses of study at home and looking into these subjects in a practical way.

Dr. M. R. Barker, of Chicago:—I think what Dr. Beek has said is eminently correct, and his procedure has been mine and possibly everybody's if they expect to succeed in these feeble cases. I believe it should be the practice of every one who is treating prostatic troubles surgically to make it a rule, as far as possible, not to operate on the infected gland in the presence of an infected bladder, whether you can operate suprapubically or perineally. I would rather take the chances of the perineal than the suprapubic route, but I do not believe the operation should be attempted in either case, if we can avoid it, and we most always can. These old men can be operated on by suprapubic cystotomy and the bladder drained in some way. The bladder can be washed out, and later the prostate may be removed. I believe that is the proper way to treat these cases.

With regard to the condemnation of the catheter, of which I spoke, I mean every word I said. The catheter should be condemned. I do not want to go outside of my paper in the discussion of that subject. I stated that the family physician first sees the prostatique when he has his first spasm of prostatic trouble. What should be the advice in that case? It is best to cure him, is it not? Is there any other thing that will cure him? I condemned the catheter because it is not the treatment of the condition at all. It is simply a palliative method. The catheter must be used every time the patient wants to urinate, whether once or fifty times. It does not aim at the treatment of the condition; it is simply palliative, and that is all. Supposing you take a patient who just presents himself with an enlarged prostate; you draw his urine, which is the proper thing to do; you give him a catheter and say, "Use this catheter so and so." And he will use it. Do you think for a moment he will give up that catheter until he has reached the feeble class described by Dr. Beek? He will never abandon it in the world until it abandons him, or he cannot use it any longer. He will continue to use it until he can not pass it into the bladder, and then he will call on some surgeon to remove the prostate in his feeble condition. There is subject matter enough here to write a volume about in condemnation of the use of the catheter. Think of the mental condition that is produced by the man who uses a catheter! Any of you, who have studied these cases, will find that soon after an old man has begun to use the catheter he gets out of society, he gets out of business, and becomes a recluse. He does not want to be seen around, because he has to urinate every hour: he has to go somewhere and use the catheter. Do you think it is the proper thing, as a physician, to tell that man to use a catheter when you know there is a treatment that will cure him every time in the condition he is in when he first presents himself? I say, it is my duty as a physician, as a man who is interested in his future physical condition, to advise him while he is in good condition to have his prostate removed, while it is a benign operation, so to speak. It is the only proper thing to do.

With regard to the other point I have spoken of in my paper, I think we as

surgeons are largely to blame for writing about it in our medical papers. We take up somebody's article, in which he describes the perineal operation, or some other operation, and he says he does this operation because the percentage of post-operative troubles after it is much less than after the other operations. The prostatic urethra passes through the prostate. The ejaculatory ducts are in the prostate. Can you take away the prostate suprapubically and not disturb those things? Can you take away the prostate perineally and not disturb them? The conditions are just the same. It does not make any difference whether you go in from above or below, you will disturb those things.

Dr. Ferguson (closing the discussion):—My paper was directed towards one object, the perineal operation of choice. When a case has been decided in its diagnosis; when an operation is to be performed, in the vast majority of cases the perineal operation should be the operation of choice; that through the perineum you can remove—at least, I feel I can—any enlargement of the prostate. To say that when they are pedunculated you must go in from above and remove these polyps, if I may so call them, is not so. I have removed a number of them through the perineum. If the lateral lobes are not enlarged, it is an easy operation to split the perineum as for stone in median line, pass the middle finger in, and with forceps seize the pedunculated portion of the prostatic tissue and turn it out through the perineal route through the internal vesical part, through the prostatic urethra, and that is the end of it, if it has a small pedicle. If it is sessile; if you get formations in different directions, you sometimes get them overhanging from the lateral lobe, which will shut off the vesical flow from above downward; then you can remove them in the same way as you do the other lobes. When the middle lobe is projecting from behind, to say that one can not remove the prostate without disturbing the ejaculatory duct is not true. I have proven repeatedly that I can remove the prostate through the perineum without disturbing the ejaculatory duct. In old men you do not care whether you cut through them or not.

The catheter discussion does not properly belong to this symposium. I use the catheter in some of these cases. Usually, however, the cases that are referred to me are operative ones; but I prepare my cases for about a week before operation. I regard that as necessary. I find I have to operate at the end of that time, sometimes at the end of two weeks. Let us suppose there are stones in the bladder from the inflammation and suppuration, which we can not get rid of either by suprapubic cystotomy or by perineal drainage, and we have to render the bladder just as aseptic as we can before removing the prostate.

In the feeble cases I remove the stones, then I can get direct drainage. In the case of the old physician in Bloomington, I did the operation in two stages. I found an encysted stone. I removed the enlarged prostate first, which enabled me to get rid of more sepsis, and then I removed the stone when the bladder was septic. His bladder is still in a septic condition, and that is why he had a perineal fistula. If you remove the prostate, you have to go after it while there is suppuration in the bladder, and I have resorted to one thing that I have not previously noticed, and think it of some use. I have a judge with an enlarged prostate who does not want to undergo an operation. He gets ammoniacal urine, with retention; I catheterize him and wash out his bladder every two or three days in succession, just as often as he comes. After washing it out I leave it nearly full of a feeble antiseptic solution, and massage is added. A simple way of massaging the bladder to increase its contractibility is, after having it full, take an ordinary rubber syringe, fill it with antiseptic solution, work it in and out of the bladder, tell him to urinate, and he will pass two or three ounces. The bladder is contracted. You can repeat that, after which he will urinate some more, until you get the residual urine down to a minimum. You leave sufficient antiseptic solution in the bladder to contract it; then the patient will go on for two or three weeks until some more is done.

A practitioner in Elkhart, Ind., was never able to see the necessity for prostatectomy. He got hold of an old man who had an enlarged prostate, who

could not urinate, and began to pass a catheter. He was a busy man. The old man tried to pass a catheter on himself, and as he had only one hand, he infected himself, so that he could not continue to catheterize himself. This physician then recommended prostatectomy, which was consented to, and performed by myself. In this case a beautiful result was obtained, although the patient was asthmatic and over 76 years of age.

THE MACROSCOPIC AGGLUTINATION OF THE TYPHOID BACILLI AS A DIAGNOSTIC TEST FOR THE GENERAL PRACTITIONER.*

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CHICAGO.

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The macroscopic agglutination reaction refers to the phenomena which result when typhoid bacilli, in a liquid suspension, are exposed to the action of typhoid immune serum, which has the property of clumping these organisms and causing a visible precipitation of the clumps thus formed. As is well known, the characteristic features of the microscopic or Gruber-Widal test are the arrest of motion and the formation of bacilli into clumps. The macroscopic reaction differs from this only in that it affords opportunity for the exposure of a greater number of bacilli to the action of the serum, and the consequent formation of clumps which are sufficiently large to be visible to the naked eye. The precipitation of these clumps in the test tube is a third and even more characteristic phenomenon and constitutes an end reaction which is unmistakable.

The development of the technic of this test had its origin in an observation that in the mixture of the diluted blood and the bouillon culture in a test tube, preparatory to a microscopic test, a clumping and precipitation of the organisms occurred. The same process was observed when bacilli from agar cultures were suspended in water or salt solution and mixed with serum. Further tests showed that bacilli killed with heat or various antiseptics reacted as well or even better than the live organisms, for the reason that with dead bacilli the clumps formed are permanent if the mixture is allowed to stand, and will reform in less time than before if they are broken up by shaking; whereas the live bacilli may multiply after a few hours and break up the clumps already formed, or by the turbidity produced obscure the reaction. The essential details concerned in the preparation of the emulsion herein recommended are the results of a long series of experiments dealing with various cultures of typhoid bacilli and the influence of different media upon their agglutinability. The experiments also concern the efficiency of the various antiseptics used for the killing and preservation of the bacilli, the turbidity of the emulsion, and the methods of collecting and diluting the blood used in the test.

The conclusions are not yet compiled in a manner suitable for publication, but will be presented in the near future. As a preliminary an-

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nouncement, I would state, however, that the emulsion which has proved most efficient is a suspension of agar cultures of highly agglutinable typhoid bacilli in a 1 per cent. salt solution to which is added .6 per cent. of formalin. The turbidity index which is representative of the number of organisms present corresponds to the opacity of a mixture of one part of tincture of benzoin in approximately 15,000 parts of water. In rapidity of agglutination and reliability of results, this emulsion equals and, with many serums, surpasses the preparations now on the market, including the much discussed Ficker "Typhus Diagnosticum," a secret preparation which has been so favorably received in Europe.

For experimental purposes, when large quantities of serum are required, the best method of collecting the blood is by aseptic puncture of a vein in the arm with an aspirating syringe of 5 or 10 c.c. capacity. The blood obtained is placed in a test tube and allowed to stand until the serum has separated. For clinical tests, however, a sufficient quantity of blood can be obtained by puncture of the lobe of the ear under aseptic precautions. The blood may be mixed directly with distilled water in the proportion of 1 to 15, or a drop may be placed on absorbent paper or on a glass slide and allowed to dry. The dried blood can be used any time subsequently by dissolving it in 15 drops of distilled water. This, when mixed with an equal quantity of emulsion, gives an ultimate dilution of blood of 1 to 30. When the fresh blood is mixed with the diluting fluid, it should be allowed to stand until the fibrin and the corpuscles have settled before mixing with the emulsion, or it may be added to the emulsion at once, but, in this case, a control tube should be made of the diluting fluid, as the precipitate formed by the undissolved fibrin and corpuscles might otherwise prove misleading.

The use of the serum, obtained by allowing the blood to coagulate, is better than the whole blood for experimental purposes, for the reason that in a given quantity of serum the amount of agglutinating material is greater than in the same amount of blood and, in low dilutions, no interference by corpuscles and fibrin occurs, thereby making possible the easier recognition of slight or incomplete reactions.

It has been generally recommended, in text-books, that a dilution of blood is equal to one-half the same dilution of serum. The experiments upon which this report is based show that the difference is not as great as this, and attempts are now being made to establish a more correct coefficient or ratio. Until this is done, if a dilution of blood or of serum is used, the same should be stated, as computations of blood dilutions in serum values are obviously incorrect.

It must be emphasized that an arbitrary dilution of blood of 1 to 30 and of serum of 1 to 50 is of value only when the amount of agglutinin is small; in other words, early in the disease. When the agglutinins present are great in amount or when the blood possesses a high agglutinative value, as it does when the disease is at its height, greater dilutions must be used. The reason for this is not clear, and it is not the object of this paper to enter into the discussion of this point. It is sufficient to say that a serum of high value will not agglutinate an equal quantity of

emulsion of typhoid bacilli in low dilution as 1 to 50, as well as in dilutions of 1 to 100 or higher. For this reason, several tests with different dilutions are recommended.

DETAILS OF TEST.

To 1 c.c. of the emulsion in a 4 c.c. test tube there is added an equal quantity of distilled water containing a stated amount of blood or serum. The tube is then corked and inverted a few times to insure mixing of its contents. The first change observed in the mixture is an increased turbidity, due to the formation of minute flocculi or clumps. These increase in size, causing a transition from a finely granular to a coarsely granular appearance. As the flocculi become larger they become more and more distinct until they slowly settle to the bottom as a white precipitate, leaving the supernatant fluid clear. The above is a description of a typical complete reaction, but in cases where the agglutinins are insufficient the reaction may not proceed beyond the formation of flocculi, or, if precipitation does occur, the supernatant fluid remains slightly turbid. Such an incomplete reaction may be considered highly significant of the presence of agglutinins, but repeated tests should be made from day to day until a complete reaction occurs.

In numerous experiments it has been observed that slight continuous agitation serves to increase or hasten the formation of flocculi, but prevents the complete precipitation of the same. This fact suggests that placing the tubes in the pocket where they are convenient for observation really enhances the reaction. Complete precipitation can be obtained by allowing the tubes to stand for a short time.

The advantages of this reaction over the microscopic test are obvious. The latter necessitates the possession of a microscope, a fresh bouillon culture of typhoid bacilli, repeated observations and a familiarity with a rather tedious technic. In this test, the dilution and admixture of serum and emulsion can be done at the bedside, the tubes placed in the pocket and observations made during leisure moments. In point of delicacy, most cases of typhoid fever will show formation of flocculi with the macroscopic almost as quickly as with the microscopic test, although early in the disease cases are met with in which the agglutinins of the blood are present in such small quantities that the clumps formed are recognizable only with the microscope.

It should be remembered that this reaction is not an absolute indication of the presence of typhoid fever, but is only an index to the presence of agglutinins in the blood, and the interpretation of its occurrence is subject to the same restrictions which apply to the microscopic reaction. Agglutinins may not be present in the blood of typhoid fever patients until late in the disease and may persist for several years after recovery.

Infection with paratyphoid bacilli will also cause the formation of agglutinins acting on typhoid bacilli, and, owing to the similarity of symptoms, confusion of these two conditions is undoubtedly frequent, but until the advent of the anti-typhoid serum the differentiation is not of great importance from a therapeutic standpoint. A typhoid bacillus, highly agglutinable to typhoid immune serums, which does not agglutin-

with some paratyphoid immune serum, has not yet been obtained, and until such can be found the use of a paratyphoid emulsion which may be prepared and used in the same manner as the typhoid emulsion is advised. Paratyphoid immune serums do not, as a rule, agglutinate typhoid bacilli in as high dilutions as paratyphoid bacilli, and, if the dilutions are equal, the agglutination takes place more rapidly with the paratyphoid emulsion. The ease with which the test may be performed and the opportunity thus afforded to confirm or strengthen the diagnosis of a disease, which is often confused with other conditions, should make it a part of the routine examination in all cases, where typhoid is a suspected or even a possible condition. The macroscopic test with emulsions far less delicate than the one now perfected has been used at various times in the wards of the Cook County Hospital and proved satisfactory. It is to be expected that in the general employment of this test some new facts will be discovered which have not been met with in the experimental work or in its, as yet, limited clinical application, but, considering the general principles upon which it is established, there seems to be no reason why it should not be generally adopted as a simple, reliable diagnostic procedure.

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TREATMENT OF THE OPIUM HABIT.*

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I believe morphinism is a disease. With those who think as I do, there are two theories. There is, first, what may be called the physical theory. Throwing aside the element or factor of the use of opium or its alkaloids merely in cases of pain, or to woo sleep, men use morphin because the distorted nerve cells in their all-distorted bodies clamor for the drug as the stomach hungers for food or the lungs demand air. This is the physical theory. Then there is the mental theory, not totally distinct and divorced from the physical one, but playing along beside it a much larger part in the problem than, until recently, men have learned to admit. It is not merely the congested stomach; it is not alone the half-starved nerve cell; it is not only the anemic brain; it is not merely the whole abnormal physical machinery together that offers adequate solution; but the drug habitué is one, because of the hard, inexorable necessities that cover all his mental firmament with dull and neutral clouds.

Your heavily worked physician, your business man taxing his every energy to meet the thousand contingencies and intense and promising possibilities; your author whose book must be spiced up to the demand of modern literary taste; your woman of society, who burns the candle of life at both ends, find in the enchantment of the softly whispered

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promises of morphin, the friend who shall spread a shimmer of brightness over their extended field of incessant care. Your devotees of pleasure, as their energies begin to lag, and the nerves of their systems so constantly strung to concert pitch, no longer respond as a whole to the normal realities of existence, would fain, if it be possible, start the wheels around with faster rotation, would put a heavier pressure upon the engines of the sensibilities of existence, and in the opium dream, they find what their dull sensations crave.

The former of these theories is that of the materialist, who finds his explanation of most of life's enigmas in the potency of matter to account for the facts of life; the other is the ground of the idealist, who looks for his explanation of what he sees and hears in the dominance of that mysterious something we term mind in its power over matter. Are they both correct, or neither? As usual, the truth is more likely to be found between the extremes of the swing of the pendulum. A tortured and abnormal working physical system accounts for a very large class of the observable things that we meet.

In my opinion, the thousands who are addicted to morphin are so because of minds that seek relief, of brains that can not apply the brakes to thought, and because of a lesson they have learned too late, that these modes of relief which they have sought so eagerly have been purchased at the cost of a reconstruction and a new abnormal organic structure as well as functional working of the entire physical organism. Put these two solutions together, give each its adequate scope, and we have gone far to reach, if we have not reached, the actual end of this problem.

We speak of the alcohol habit, of the opium habit; what do we mean? A man has a habit of buttoning his coat in a certain way. Daniel Webster is reported to have once said that he could change the style and character of his speeches easier than the habit of wearing a certain kind of collar. One man has a habit of early rising, another a habit of morning bath, another a habit of certain kind of mode of speech. Is that what we mean, and all that we mean, when we say that a man is in the morphin habit, merely that custom has taken control of the helm of volition and that his habit is a something that has this power over his life, and no more?

What is the distinction between a habit and a disease? That is a habit which a man does merely from repetition, which writes no deeper imprint into his life, which makes no deeper groove in his soul than is the result merely of the accumulation of individual actions, the yesterdays and yesterdays making the path of that action easier for to-day and to-morrow. The fingers of the pianist habituate themselves to rapid and almost automatic action. That is a disease when the checking influence of some portion of the nervous organism is changed in construction or altered in its method of action. If it is a change of structure we say the man has an organic disease. If it is a change in a mode of action, we say that man has a functional or biochemic disease. A man with an intermittent heart, whose pulse beats vary in time, we say has a functional disease of the heart. The man whose heart valves do not com-

pletely close, where those heart valves have been changed in form, we say has an organic disease of the heart. The opium habit would be a habit if the effect of yesterday passed into and out of the system and left no change or imprint there. The opium habit is a disease, provided that in nerve cell, in the brain, in the spinal cord, blood corpuscle, or in other cells, biochemic change of structure or alteration of function has taken place, because of the effect of the poison.

We have measured, with reasonable accuracy, the rate of speed that sensation travels along the path of the nerves. That rate of sensation in the normal man has one rate of progress; along the nerves of the morphin habitué it has another. That process which we term absorption and elimination in the normal man has one mode of action as to rapidity, as to completeness; in the body of the morphin habitué it has another. In the body of the opium eater, every nerve cell, every atom of bodily tissue, has reconstructed itself to meet these changed and abnormal conditions. The consequence of a habit, with this restriction of significance, is virtually to leave the man as he was. Webster could have changed the shape of his collar and still been the great Webster. The man who buttons his coat upon the right side can button it upon the left and still be the same man. The man with organic or functional disease written not only upon him, but written into him and permeating him through and through, presents an entirely different proposition.

Of all the tissues of the human body, the nervous system is the one whose changes are the most subtle, whose results reach farthest and whose abnormal working produces the most intense results upon character. The broken bone unites in a few weeks, and, when the sufferer from fracture has laid his crutches away, he is the same man he was before the accident. The man whose muscular system is injured does not find that his life has undergone any special change. But change the structure or disarrange the workings of the nervous system, and you have an element entering into the problem, which produces results far different in kind. I have seen the man of unswerving integrity, who was temperate, genial, kind, cordial; I have seen such a man's moral character go all to pieces under a severe attack of neurasthenia. I have seen the strong man become puerile, the man of serene temper become more irritable than a sick child, the honest man become a liar, the temperate man change to a dipsomaniac, the man of pure and chaste thoughts become licentious, all because of disordered nerve action. When, therefore, we are dealing with an agent like morphin, whose whole force is expended upon that portion of the physical organism that produces results like these, we need not doubt the existence of a diseased condition, nor wonder at the Protean forms in which the opium fiend writes its autograph into men's deepest chambers of experience.

THE TREATMENT OF MORPHINISM.

In the treatment of morphinism, the physician should take into account certain symptoms resulting from the constitution of the habitué which are not directly due to the disease and in many instances bear no relation to it. Many of the states described in the title of opium

habit occur principally in cases of inherited and acquired nervous effect which has led to the addiction. Morphin habitués occur in degenerates, in cases of acquired neurasthenia, in diabetics, in victims of rheumatism, traumatism, gout and insolation, in congenital and acquired hysterics. Simple removal of the morphin habit, therefore, will not remove all symptoms which have been charged to it, especially since there is a great tendency with morphin habitués, as with alcoholics, to charge all their delinquencies and disorders up to the drug. Not only is this the case, but very frequently the habit is charged to a physician who has given morphin to control opium marasmus acquired from the sudden abstinence from an opium nostrum which the patient has used without the knowledge of its contents. Some years ago, Dr. Buchanan's Scotch Oats Essence and Harriet Hubbard Ayer's Vita Nuouva were the sources of much morphinism. The last named was endorsed by several leading Women's Christian Temperance Union people as a cure for nervous diseases. It is said to have contained 2 per cent. of morphin, 1 per cent. of cocain, and 50 per cent. of alcohol. One clergyman endorsed it not because he knew anything of the value of the compound, but because he knew its manufacturer socially.

The first question in the therapeutics of morphinism, is whether the Levenstein method of stopping the drug abruptly should be adopted or whether the drug should be gradually withdrawn. Few constitutions will stand sudden withdrawal of the drug and the resultant opium marasmus. Certainly no one over sixty years of age should be subjected to such a strain, as the cerebral arteries have a tendency to yield to increased blood pressure, and cardiac neuralgias occur which may kill as quickly as angina pectoris. Gradual withdrawal, however, will succeed even in cases of this type, albeit excellent professional opinion is against attempts to cure morphinism in patients over sixty. The effects of sudden withdrawal are well illustrated in children who have been nursed by opium using mothers whose breasts have suddenly run dry. In these cases the children given other milk, become affected by severe opium marasmus, to arrest which opium in some form has to be given.

Opium, it must be remembered, is nearer than any other drug in chemical constitution to nerve tissue, and, furthermore, is one of the drugs which passes through the placenta, as careful analysis of the umbilical blood by Bureau and others has shown. The problem of gradual removal has much the same elements in a less intense form, as that of sudden withdrawal. There must be substituted some remedy which will take the place of opium in the general constitution of the patient and will as well reproduce normal metabolism, which is markedly affected in morphinism. The morphin user is always a victim of toxemia from arrested functions of the kidneys, liver and adrenals. To secure a proper substitute for the drug, attention must be paid to the functional activity of these organs. Here intestinal antiseptics, laxatives and cathartics come into play. Unless this toxemia receive attention, there is no good substitute for morphin. Even if opium diarrhea occur during

the reduction of the drug none the less should the antitoxemic treatment be employed.

Another great factor which merits attention is nervous excitement and insomnia. Here much benefit can be derived from cold sponging and certain hypnotics. Cold sponging relieves the tendency to internal congestion in a way that no other agent will. The patient should be placed with the feet in warm water and carefully sponged down the back of either side, so as to reach the spinal nerves, with cold water to which a small quantity of alcohol has been added. The same sponging should be done on the inner and outer aspects of the thighs so as to effect pelvic circulation through the sciatic and genitocrural nerves. Excessive starchy food should be forbidden and the proteids reduced in proportion to the amount of renal strain that exists. An excellent tonic and supportive drug during the withdrawal of morphin is strychnin nitrate in small doses frequently repeated (gr. 1/200) so as to secure a cumulative effect. The best hypnotics are a combination of sulphonal with a vegetable neurotic like conium, hyoscyamus, passiflora, etc. A good intestinal combination is that of creosote, oil of birch, pancreatin, inspissated ox gall, extract of colocynth compound and eserine nitrate. The sulphocarbolates are very beneficial also as an intestinal antiseptic. All co-existing conditions leading to the morphinism should be recognized and treated. Many symptoms charged to the withdrawal are really due to these conditions. It should be remembered that the morphinist very frequently does not desire to recover but seeks to secure sympathy in the methods familiar to the hysteric, but with even a meaner motive, that of sponging on friends.

It is absolutely essential in the successful treatment of morphinism to secure entire control of the patient and to protect him from himself. No person can treat himself successfully and the "home treatment" almost invariably fails. He should be placed in an institution under a new environment and a trained nurse should be in constant attendance. This surveillance should be continued long after the drug has been discontinued and the cessation of active treatment.

A morphin habitué is by no means cured when the drug is discontinued. The real physical and mental regeneration begins only when the morphin is stopped.

I am firmly convinced, after an extensive experience in the treatment of these cases, that one can by no means guarantee a permanent cure unless the patient is under the constant care and observation of the physician for at least six and better ten months. Any shorter time is very apt to be followed by relapse. The patient may feel well and strong in purpose, but after a few weeks or months, especially if he return to his business and old environment too soon, he will become restless and irritable. Between the man's inmost individuality and the world in which he lives, between his inmost self and the life that touches it, there is a gap. He feels isolated, lonely and apart from his fellows. The evenings find him tired. Physical and mental work weary him even more than usual. The emergencies of life seem to come with increasing

frequency and he has to force himself to sleep. He holds his eyes fast closed until he thinks an hour or two has passed, and opens them to find that perhaps two minutes have glided by. There is marked muscular delirium and it is impossible for him to lie still. He goes from bad to worse, struggling against the awful, indescribable craving for the drug he knows will bring him rest and peace. It seems to him that every day contains the heart of an eternity. And this condition of human agony continues, growing worse and worse day by day until the trembling, suffering, irresponsible fragment of a man gives up the fight and goes back to morphin.

This is a very, very common occurrence. How necessary it is then to gain the confidence of your patient and to tell him the truth. Tell him that he can be cured, but that it will take time, months of time. Explain to him the great danger of relapse under the various advertised "quick" and "home" cures. Each relapse renders a cure more difficult. The great majority of morphinists whom I have treated had been "the rounds," had tried dozens of rapid cures, but, unfortunately, in many instances they had not profited by their failures and wished to return to business a week or so after the withdrawal of the morphin. Despite their past experiences, they had unusual confidence in their strength and vigor, and believed that they would not relapse again. Such patients now resent further surveillance and assistance. This is particularly true of physicians, who by the way, are the most difficult people to handle.

In conclusion, I will briefly outline the general line of treatment I usually adopt. There is, however, no systematic, routine, specific treatment for this disease. The patient and not the disease, here, as in all cases, is first to be considered. I first ascertain the maximum dose and the total daily amount of the drug the patient is taking. Then I begin the gradual or more rapid withdrawal of the morphin, the method employed being governed entirely by the character of the case. Under no circumstances must the patient know the amount he is given at any stage of the treatment. If he is taking it hypodermically, I endeavor to abandon the use of the needle as soon as possible without detriment to the patient, substituting deodorized tincture of opium or codein in some vehicle, preferably non-alcoholic, which will completely disguise the taste of the opium. The patient is invariably encouraged when he can abandon the use of the hypodermic syringe. The opium in the mixture for internal use can be diminished as required. Free elimination by the bowels, skin and kidneys must be maintained. The urine should be frequently examined. This is necessary to ascertain the metabolic condition, but especially important after you have the patient off the morphin to ascertain if by any possible means he is surreptitiously taking the drug. This can be learned by testing the urine with Merck's neutral chlorid of iron. I have already mentioned some of the hypnotics employed when such drugs are necessary. Hypnotics should be changed frequently.

Hydrotherapy properly employed is invaluable. No case can be properly tested without it. Static electricity or electric baths are of great

value in some cases, but not in all. The immediate surroundings of the patient should be made as pleasing as possible. Food and medicine should be given in the most agreeable forms consistent with usefulness and the same kind of attention paid to every method of treatment employed.

Suggestion is a potent factor in the treatment of morphinism and the physician should employ it constantly and encourage his patient in every possible way. I wish to emphasize the great importance of having the patient stop the use of tobacco. I have sometimes felt that it was almost impossible to cure either opium or alcohol inebriety while the patient continued the use of tobacco. The weed should be given up entirely. It should never be resumed, for its resumption is often followed by relapse. During the treatment, care must be taken of the diet. Small quantities of food should be given at short intervals rather than full meals at stated hours. After the withdrawal of the morphin, the treatment should combine nerve and mental rest, tonics, diversion, and by all means, elimination, suggestion, encouragement, and close surveillance for some months. After this, the patient if possible, should travel, or at least not return at once to his old life and subject himself to all the strains and drains which brought on his former addictions, nor should the person of wealth return to habits of indolence and excess.

I am fully in accord with Crothers, who says, "The effort of many physicians to treat all persons alike by the same medicines or needle injections is empirical." Morphinism can be cured in the great majority of cases, if the physician can have the confidence and entire control of the patient, and have him in an institution where all the facilities for proper treatment are at hand, and provided he can keep the patient under observation a sufficient length of time, and will treat the patient, mentally and physically and not merely the disease, according to some routine method.

INTESTINAL DISORDERS OF CHILDHOOD ACCOMPANIED WITH DIARRHEA.*

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It may be well to define what we mean by diarrhea, at what stage interference becomes necessary, when the normal becomes abnormal, whether it is the number of movements, the character of the stools, the elevation of temperature, or the combined clinical picture of the whole. It is generally agreed that if children have over five movements in twenty-four hours, it may be considered that they are having diarrhea, but if they are having this number or less without fever or vomiting and the stools are fairly normal in character, that the condition is simply eliminative and is the result of either too much food, too frequent feeding, food too rich in composition, or food not suited to the age and development of the

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individual child, and that the correction of this error or the removal of the cause is all that is necessary for the relief of this class of cases. On the other hand, if the movements are frequent, running up to six, eight or more in twenty-four hours, with or without a rise of temperature, offensive in character, containing mucus, curds, or other undigested matter, it may be said that they are having diarrhea and that interference is necessary, but let us remember that diarrhea is a symptom and not a disease. It is an indication of a pathological condition, and that all diarrheas are eliminative in character.

Diarrheas may be divided into two general classes, primary and secondary, and it is with the former class that we will interest ourselves, simply mentioning some of the more common forms of secondary type, as those complicating or accompanying typhoid fever, measles, scarlet fever, pneumonia, tuberculosis and burns. While they are many times serious in character and determine the issue of the disease they complicate, their treatment does not differ sufficiently to require their special consideration. The term diarrhea covers all conditions attended with frequent loose evacuations of the bowels and is dependent upon increased peristalsis and secretion. The etiological factors common to all forms of diarrhea in children are age, food, surroundings, season, constitution and dentition. Of 3,000 cases collected by Dr. Crandall and reported by Holt, the ages were as follows: 14 per cent. were under 6 months old; 29 per cent., from 12 to 18 months; from 18 to 24 months, 24 per cent., and 16 per cent. were over 2 years. Of 1,500 children with diarrhea applying for treatment at the Jackson Park Sanitarium, the number ran a little lower for the first six months, 13.5 per cent., with 28 per cent. from 1 to 2 years old and 15.3 per cent. between 2 and 4 years old. These figures show an increased susceptibility to diarrhea in the very young and a diminished tendency as age advances. It would appear that some relation may exist between the marked susceptibility of the young to bowel trouble and the high mortality under 1 year of age. Of all the children born in the State of Illinois, about one-fifth die before they are 1 year old.

Feeding is probably the most potent factor in the production of diarrheal diseases of childhood. Of 1,943 fatal cases of diarrhea collected by Holt, less than 3 per cent. were exclusively breast fed. Howarth (*Lancet*, July 22) has investigated 8,348 cases, 63.3 per cent. of whom were hand fed, 19.6 per cent. partly hand fed, and only 17.3 per cent. breast fed exclusively. The mortality among the hand fed was nearly three times that of the exclusively breast fed and twice that of the mixed fed. The figures of Holt and Howarth are illustrative of the statistics from all sources, and all students of this subject agree that the highest immunity from diarrheal diseases is enjoyed by the wholly breast fed, and the next highest by those partially breast fed, while the most susceptible are the exclusively bottle-fed babies.

It is not artificial feeding, *per se*, that is the cause of the great mortality from bowel troubles in children, but the methods of feeding it, the quantity, the kinds and quality of the food. Most artificially-fed children

are overfed, both as to quantity and frequency of feeding. Bad mixtures are given them and they are fed every time they cry; fed four or five times from the same bottle without changing the contents or the nipple after the latter has been in the mother's mouth several times to test the temperature of the food, in addition to having been exposed to all the bacteria in the house, including urinary and fecal contamination.

The surroundings of a baby has its advantages and disadvantages. Living in vitiated air and filth lowers the constitution and lessens the powers of resistance, especially in hot weather. Diarrheal diseases are especially frequent in cities and among the poor, yet no location or apartment, however well appointed, can claim immunity from this disease. Vacher has shown that no constant relation exists between density of population and surroundings and diarrheal disorders. They are not essentially filth diseases, yet their frequency and severity are increased by want of cleanliness of the surroundings and person of a child, especially of the napkins of an infant.

Season undoubtedly has a marked influence on diarrhea of children, as the following figures will show. The average for the months of January, February, March, April and May for children under 5 years of age was 175 per month; for the months of June, July, August and September, 1,741 per month, while for the remaining three months of October, November and December the average was 352 per month, and October furnished more than half of this latter number. A minimum temperature of 60° F. for three successive days markedly increases the number of cases of bowel trouble.

It is not definitely known whether there is any direct thermic relation or whether it is the indirect influence of heat on the children, increasing their thirst, and thereby leading them to take more food than is good for them, or whether the heat renders them less able to digest what they take, or whether it is the influence of the heat on their food supply, increasing the contamination of especially milk, or whether it is of bacterial origin. Possibly it is the combination of all of these influences. Baginsky has shown that no constant relation exists between humidity and precipitation and diarrheal diseases. Children with feeble constitutions are more prone to bowel trouble than robust ones; also constitutions predisposed to tuberculosis, rickets, syphilis, marasmus and especially previous bad feeding. Diarrhea accompanying dentition is not normal, yet we can not deny that occasionally some relation seems to exist, as a case of mild type will clear up on the eruption of a tooth.

Diarrheas of children have been divided and subdivided into many varieties, but, as we see them clinically, it is many times as much, if not more, a matter of degree than kind. They are all eliminative in character and, with the exception of the purely nervous type, they are the result of an effort of Nature to relieve the system of offending material. The causes vary from a mechanical irritation to a profound toxemia, the result of decomposition of the contents of the alimentary canal, with bacterial activity. The process ordinarily begins as a gastric or a gastrointestinal indigestion. It may be limited to either one for a time, but

sooner or later both are involved. It may commence as a slight deviation from the normal, increasing day by day until a large part of the canal is involved and the whole system poisoned from the daily absorption of toxic matter; or the onset may be sudden, from one feeding of an indigestible mixture or contaminated milk. Uncontrolled, the process increases and soon degenerative changes in the epithelium of the stomach and intestine ensue, desquamation of the epithelium of the mucous coats, a catarrhal inflammation, and the avenues for infection are open. If this occurs in a robust, well-nourished and well-developed child, Nature comes to the rescue with a hypersecretion of the alimentary fluids, an increased peristalsis, and a few loose movements occur, with or without vomiting. If this danger signal is heeded, serious trouble may be averted. If no attention is paid to Nature's call for help and more fuel is added to already kindled fire or—worse than no attention—a dose of some sedative or astringent is given, and Nature's effort perverted, deeper inroads are made and avenues of infection are established, and through this bacteria and their toxins make their entrance into the circulation. At this period one of two conditions may ensue: either acute gastroenteric intoxication as the result of bacterial fermentation, or a more subtle type, catarrhal in character, depending on the constitution, present and previous care and management of the child and the infection. If the former condition (acute gastroenteric intoxication) or bacterial fermentation takes prestige, few gross lesions in the lumen of the stomach and intestine occur. The clinical appearances in these cases are greatly in excess of the post-mortem findings. With acute gastroenteric intoxication, vomiting may be an early and persistent symptom, or the stomach may remain quiet through the entire attack, depending largely upon the temperament of the child, the location of the trouble, and the character of the toxemia. The bowels become loose, three or four, or sometimes as many as ten or fifteen movements in twenty-four hours. The first few movements will contain undigested food, curds (if the child is taking milk), gray or green in color and very offensive. Later they contain mucus and sometimes streaks of blood. The temperature ranges from 101° to 106° F. The pulse at first is full and bounding, but becomes weak and rapid. Child is restless, cries for water and, if given it, will drink it ravenously and vomit it up immediately. If food is taken, it is more for the fluid than the nourishment it contains. In a few of these cases, the bowels may be constipated, probably from some peculiar action of the toxins paralyzing the reflexes, either peripheral or central, and preventing their normal eliminative activity. In this event the true nature of the case is very much more difficult to recognize. Vomiting is much more persistent; in many cases nothing will be retained in the stomach for a number of days. Even ice will be vomited as soon as it is melted.

Ingrafted on to this gastroenteric intoxication or concomitant with it may be a condition much more alarming in appearance and much graver in character, the so-called cholera infantum type of diarrhea. The first stools contain food, if any has been taken, are green in color, soon becoming yellow or brownish, acid in reaction and slightly offensive. Very

soon they become mucous or serous, or they may contain serum only, odorless and neutral or alkaline in reaction. The temperature runs up rapidly to 103°, sometimes to 106° or 108° F. The pulse is weak and rapid, features sharpened and blanched, eyes sunken, with an anxious expression, mouth drawn, fontanels sunken, sphincter relaxed and involuntary movements occur, or the voluntary ones may run up to twenty or thirty in twenty-four hours. Vomiting is persistent if anything is swallowed, and sometimes it will occur when nothing has been taken. The face and forehead are often covered with perspiration. The child is restless, moans or cries most of the time and loses weight rapidly, sometimes two to three pounds a day. Usually this condition is traceable to some external cause, as feeding contaminated milk, rather than to a toxemia generated in the body, or it may be from tyrotoxin in the milk (Vaughn). The gross lesion in this form of diarrhea is much more marked in appearance than in the gastroenteric intoxication.

After the first explosion, in a number of these cases, they run a milder course and recovery is fairly rapid. In the other form, the catarrhal variety, the onset is mild, the temperature ranging from 99° to 102° F., with a slight diarrhea for the first few days, which gradually increases in severity, two to five movements a day, of a dark brown or greenish color, containing much mucus; some of them may be partly fecal and partly mucous, and some will contain only mucus streaked with blood; usually a good deal of straining at the time of the movement. Vomiting is not a constant feature, but may occur once or twice a day in the early stages, and may be easily excited at any stage of the disease by errors in diet or medication. The abdomen is usually distended with gas and considerable pain is complained of. The appetite is poor and the child loses flesh; the tongue is coated; later it is dry, with parched lips. This condition is designated clinically as ileocolitis, and is spoken of in the books as acute, ulcerative, chronic and membranous, but clinically it is difficult to distinguish between them in all cases. Many times one form merges into another so gradually that one does not know where to draw the line between the different varieties or forms of the disease. In these cases, more extended areas of the mucous membrane are involved in a catarrhal inflammation, especially the colon and lower ileum, although a large portion of the small intestine, the stomach and considerable of the colon may be involved in any case. Following the catarrhal desquamation of the epithelium, small ulcerative patches involve the mucosa, the submucosa and down to the muscular layer; the blood vessels are engorged and slight hemorrhages occur, showing in the stools. As the disease spreads, larger areas of the superficial epithelium are lost, the tubular glands become enlarged and loosened; Peyer patches sometimes become enlarged; many small ulcers coalesce and form one or more large ones, irregular in outline and ragged in appearance. In other parts the lymph nodules are much enlarged, giving an elevated appearance to the surface, and later break down in deep ulceration involving the mucosa and submucosa. At this period they have assumed the subacute or chronic form and are the cases that run a protracted course and recover only after the cool

weather comes to our aid, or succumb finally to the disease or some inter-current disease, of which the most common is pneumonia. If recovery takes place (and it does in a goodly number), reparative process is set up in the form of a fibrinous exudate and the ulcerative places are filled in with scar tissue that may be followed with a chronic diarrhea or a troublesome constipation.

The membranous form is the most grave of the intestinal inflammations of children and resembles the catarrhal variety. It begins abruptly, with temperature ranging from 102 to 106; vomiting is likely to occur for the first twenty-four hours, but is the exception after that. The abdomen is swollen and tender; movements resemble those of the catarrhal variety, but contain more blood and shreds of membrane, and sometimes patches of membrane can be seen protruding from the rectum. If the stools are washed with water, the membrane may be seen in small, gray, opaque patches.

Amebic colitis is very rare in children in this climate, and I have only seen one case in which the diagnosis was verified by the microscope. This is the only method of making an absolute diagnosis. This form occurs mostly in warm climates.

The bacteriologic findings in the diarrheas of children have not enabled us yet to classify the cases as we hope to when more data has accumulated.

Of 30 cases of diarrhea studied by me in the past two summers, in the bowel movements I found diplococcus in 50 per cent.; micrococcus, 44 per cent.; streptococcus, 40 per cent.; pneumococcus, 60 per cent.; mycoides, 15 per cent.; yeast, 66 per cent.; sarcina, 42 per cent.; thrush, 15 per cent.; pus, 38 per cent.; crystals, 30 per cent.; bacilli (colon), 72 per cent.; bacilli (unidentified), 60 per cent.

From the Mouth.—Bacilli, 92 per cent.; mycoides, 15 per cent.; cocci, 98 per cent.; micrococcus, 66 per cent.; diplococcus, 96 per cent.; streptococcus, 67 per cent.; pneumococcus, 33 per cent.; yeast, 49 per cent.; thrush, 15 per cent.

I had hoped in these cases to establish some relation between mouth infections and bowel disturbance, but so far have not been able to arrive at any definite conclusions. It will be remembered that Booker, in 1897, made the statement that no single micro-organism is found to be the specific exciter of diarrhea, but the affection is generally to be attributed to the result of the activity of a number of varieties of bacteria. While, generally speaking, the statement is undoubtedly true, however, it does seem possibly and probably true that some of the well-known pathogenic organisms, such as the typhoid bacillus, pneumococcus and streptococcus, gain entrance to the general circulation through lesions in the gastrointestinal tract and give rise to septicemia and are the immediate cause of death; that these areas of infection are produced by the local action of less toxic micro-organisms, such as staphylococcus, colon bacillus, yeasts and thrush fungus, and that the toxins which are generated by the saprophytic action of all of the micro-organisms in the intestines tend both

to lower the resistance of the child and to mask the symptoms of the specific intoxication.

The gross appearance of blood in the stools should always be corroborated by a microscopic and bacteriologic examination. This precautionary statement is made as a result of findings in two cases of my series of thirty, in which hemorrhages were reported and no blood was found after repeated microscopical investigations, but instead a bacilli was isolated (probably of the colon group) that produced a pigment in such quantities and with such striking resemblance that it was impossible to distinguish it from blood by the unaided eye.

The etiology of diarrhea in children can, for the most part, be summed up in three words—bad care, bad food, and a continued high temperature. The treatment can be divided into two parts, the prophylactic and the remedial, and the prophylactic into hygienic and dietetic. The hygienic consists of domiciliary and personal cleanliness, living in the open air and out of the crowded parts of the cities, especially during the hot months and when the disease is epidemic. Of all the prophylactic means, maternal feeding is the most valuable. This statement is verified by Holt's statistics in which he states that only 3 per cent. of his 1,943 fatal cases was breast fed. During the siege of Paris, the mortality of young children was 50 per cent. less than its normal status, notwithstanding the great deprivations that mothers and children were subjected to. They were all obliged to nurse their babies. It is the natural food. Every animal secretes a milk best adapted to its offspring, that contains its own enzyme, that aids in its digestion and assimilation. It is received sterile, at the right temperature, with an automatic alarm that regulates the supply and demand. If it is impossible or impracticable to nurse a child, then it becomes our duty to select a food, and, without discussing the various foods and methods of feeding, a few general objects to be attained may be mentioned.

First. A food must contain the five elements necessary to a perfect food, in proportions that it can be assimilated and will nourish and develop the whole body, and is attainable by all. I believe it is generally agreed that cows' milk comes the nearest filling these requirements. While it differs in some features from mothers' milk, it is like mothers' milk in being a whole food and carries with it its own enzymotic properties, and by a rearrangement of its different elements, it can be made to serve in more cases than any other one food, or probably all the other foods. In rearranging the different component parts, one must have in mind their different properties and what he wants to attain. We know the hydro-carbonates and fats are, as a rule, more easy of assimilation and furnish ready heat and fat producing properties to the body, and there is too great a tendency to put a baby on them to the exclusion of the proteids. It is the proteids that furnish the cell growth, replace nitrogenous waste and form a resistance to the muscular coats of the stomach, thus developing it into a digestive apparatus instead of a bag or sack which we so frequently find in condensed milk and other proprietary food fed babies.

The value of the proteids in milk is very well illustrated by the following comparative table:

	Time weight is doubled.	Proteids.
Human	180 days.	1.5 per cent.
Horses	60 days.	2 per cent.
Calves	47 days.	3.5 per cent.
Goats	19 days.	4.3 per cent.
Pigs	18 days.	5.9 per cent.
Sheep	10 days.	6.5 per cent.
Cats	9 days.	7 per cent.
Dogs	8 days.	7.3 per cent.
Rabbits	7 days.	10.4 per cent.

This table clearly points to the fact that milk is our sheet anchor, and as near whole milk as can be digested should be fed.

DIAGNOSIS.

The principal value of a differential diagnosis in these cases is the aid it may give us in the treatment. In the catarrhal forms the onset as a rule is more gradual, with frequent small movements containing large quantities of mucus and blood. Tenesmus is more likely to accompany the movements in this form than in the fermentative types. In the fermentative diarrheas the onset is sudden, with high temperature, large offensive movements that do not excoriate, and vomiting is a frequent accompaniment. Cholera infantum is usually preceded two or three days by a fermentative diarrhea of a mild type. The onset is sudden, with high temperature, continuous vomiting, large, frequent movements containing at first mucus, and then serum; acid reaction in the beginning, and then becomes alkaline, great thirst, high rectal and low surface temperature, sunken fontanels, pinched appearance, dry mouth and throat, forehead and face covered with cold perspiration, rapid loss of weight.

In the membranous type the onset is sudden, with a medium high temperature, small but less frequent movements, an early show of blood and shreds of membrane in the stools. The amebic form of diarrhea is rare in northern climates and differs so little in its clinical appearance from ileo colitis. The onset may be gradual, but it is usually sudden and is very likely to run a protracted course of two or three months, followed by abscesses in the liver. The only positive proof of its existence is the finding of amebic coli in the stools.

The treatment of these disorders may be divided into three parts—hygienic, dietetic and medical. The general hygienic care of these cases consists in domiciliar and personal cleanliness, both inside and out. Plenty of sunlight and 700 to 1,000 cubic feet of air space should be allowed for the patient and each person necessary for his welfare and comfort, and this should be constantly changed. Patients should be bathed all over every day and as much of them as is necessary after each bowel movement or urination. Napkins should be changed as soon as soiled and removed from the room and immersed in an antiseptic solution sufficiently strong to be germicidal in power. Their mouths should be washed with sterile water or a sterile solution of boric acid before each nursing. If the baby is breast fed, the nipple and any part of the breast that the child's mouth comes in contact with should be washed with

sterile water before each feeding. If fed from a bottle, both the nipple and bottle should be washed with a brush inside and out and boiled or steamed after each feeding, and kept immersed in a 10 per cent. solution of soda water when not in use. All nourishment should be practically sterile. The nurse or attendant should not be allowed to feed or handle the baby after changing or handling a soiled napkin until she has thoroughly washed her hands.

The dietetic treatment should consist in giving only such food as is easy of digestion, readily absorbed and adapted to the age and condition of the patient in composition and character. The medical and mechanical treatment in general of the intestinal disorders of children accompanied with diarrhea, consists in thoroughly emptying the alimentary canal, either by a large dose of castor oil, moderate doses of calomel, or with some of the saline group, and irrigating the colon with sterile water, normal salt, a 10 per cent. solution of boric acid, borax or bicarbonate of soda, and putting the child to rest.

The specific treatment of a catarrhal inflammation of the canal, as an entero-colitis or an ileo-colitis, is best accomplished in the acute stage by first withholding all food for the first twenty-four hours and emptying the stomach and bowels with cathartics, irrigation, and if vomiting is persistent, lavage may be resorted to. This latter measure is seldom necessary and not easily accomplished in children over two years old. Usually large draughts of water given by mouth will do this for us. Then to soothe the irritated and inflamed mucous membrane, large doses of bismuth, alkalies in the form of lime water in milk, when the latter is allowed, may be given. Small doses of opium may be given in the form of paregoric or deodorized tincture of opium for this purpose and to regulate peristalsis and for the relief of pain and tenesmus, but under no condition should any preparation of opium be given until the stomach and bowels are thoroughly emptied. If much blood is being passed, astringent injections may be resorted to in the form of aqua solution of tannic acid, or if tenesmus is a persistent feature, starch and opium injections can be given, or suppositories containing some sedative and astringent.

As soon as possible the bland foods attainable should be commenced, as meat broths, albumen water, and even some of the proprietary concentrated foods may be given, withholding all medication as soon as the conditions for which it was given have ceased to exist, and gradually returning to the food best adapted to the age and condition of the patient.

In the fermentative form of gastro-enteric intoxication, the treatment must be directed against a decomposing and toxic mass that is being absorbed and poisoning the whole system, rather than against an inflammation of the bowels, although the latter condition may exist. Stop all food for at least twenty-four hours, clear the stomach and small intestines with large doses of castor oil and flush the colon with copious enemas of normal salt solution. A long rectal tube should be used and two or three injections should be given every twenty-four hours until all evidence of decomposition ceases. The castor oil should be followed with

small doses of calomel and ipecac continued until the characteristic green, odorless, calomel discharges are produced. If the temperature runs high, as it may for the first twenty-four to forty-eight hours, the patient may be sponged or immersed in tepid water and an ice bag kept to the head. If the extremities are cold, a hot water bag or warm flannels should be used to keep them warm. After the first twenty-four hours, light feeding may be commenced, but only such food as is really absorbed and does not furnish a good culture media should be given. Sterile meat broths, egg water and the concentrated proprietary foods, followed by some well cooked hydro-carbonates, and finally milk. Astringents are almost never necessary in this class of cases and sedatives in the form of paregoric may be given to control excessive peristalsis, after all evidences of toxemia have disappeared.

In cholera infantum, we are dealing with a profound toxemia—in many cases almost continuous vomiting and bowel movements, with a tendency to a dangerous concentration of the body fluids. The toxins are acting on the vasomotor system and paralyzing the heart muscles. The ordinary medication seems to be less valuable in these cases than in the other forms of diarrhea, and as we have no specific, the best we can do is to aid nature in her efforts to overcome the disease.

All the rules of hygienic and dietetic management already given are applicable in this form of bowel trouble. The irritability of the stomach usually prevents the internal administration of medicines by the mouth. To keep up the body fluids is our first duty. This is best accomplished by copious rectal injections of an alkaline solution to neutralize the acid intoxication and put at the disposal of the system a fluid to replace the great waste consequent upon the choleraform discharges. The temperature can best be controlled by wet packs, immersion, or an ice cap. Excessive waste is best controlled by hypodermatic use of morphin and atropin. (For a child one year old, $1/100$ grain of morphin and $1/600$ grain of atropin, repeated every hour or two until the result is obtained.) Morphin also furnishes a ready heart stimulant in these cases, as it does in all forms of shock. Injections under the skin of normal salt solution are of great value. From one-half to one pint twice in twenty-four hours may be given. Stimulants, champagne, brandy and coffee may be given by mouth as soon as they can be retained. As soon as the first explosion is over, small quantities of sterile food may be tried, but great care must be exercised lest a relapse is brought on. These cases require watching for months, as there is a great tendency to relapse, and milk should be withheld until convalescence is well established.

The only internal medication that seems to be of any especial value is the very dilute alkalies in the form of alkaline water as lime water, bicarbonate and salicylate of soda.

The treatment of the membranous form of diarrhea does not materially differ from the catarrhal form except the earlier administration of anodynes to control the pain and sedatives and astringents for the hemorrhage. If the disease becomes sub-acute or chronic, the iodids in some easily administrable form act well.

The only specific treatment for the amebic dysentery is the injection of an aqueous or oleaginous solution of quinin. With the marked tendency of these parasites to burrow and produce deep shelving ulcerations in the mucous membrane, they are very difficult to dislodge.

SOME FURTHER OBSERVATIONS ON THE USES OF CITRATE OF SODA IN INFANT FEEDING.*

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This paper is a supplementary report of twenty cases fed by the addition of citrate of soda to cow's milk, plain and diluted. This method of feeding was originated by Prof. A. E. Wright, who published in the *Lancet* a paper entitled "The Possible Advantages of Employing Decalcified Milk in the Feeding of Infants and Invalids." Previous to this, Arthus and Pages had demonstrated that when cow's milk was treated by oxalates and fluorides it did not curd with rennet in so heavy a curd, because of the precipitation of the lime salts; but if, on the other hand, lime salts were added to the milk the clot formed by the rennet was of a denser curd than usual. Professor Wright applied this principle to the question of infant feeding, pointing out that the oxalates and fluorides were poisonous salts and suggested the use of citrate of soda. Dr. Poynton followed up Dr. Wright's suggestion and has used, for the past three years, citrate of soda in addition to cow's milk in the feeding of infants at the Great Ormonde Street Hospital for Sick Children, where I followed with him, its use during the year of 1904. I have used it in all of my infant-feeding cases, both in private and dispensary practice since that time.

The method of using citrate of soda is the simple addition to cow's milk, plain or diluted, of one or two grains of citrate of soda to the ounce of milk used. The dilution of milk used is that of equal parts of milk and water, or two parts of milk and one of water. In our experience, it has never been necessary to use less than an equal dilution of milk and water. We begin by using equal parts of milk and water in all the cases whether the child be one day or one year of age. To this we add one grain of citrate of soda to the ounce of milk. It is sometimes necessary to use two grains of the citrate to the ounce of milk in cases where the milk dyspepsia continues with curds in the stools. It is seldom necessary to continue the use of the two grains to the ounce for more than a week or two. In cases which do well with one grain of citrate of soda to the ounce of milk diluted with equal quantity of water we soon increase the strength of the milk, changing to that of two parts of milk to one of water. This strength of milk we use only for so long a time as is necessary in each case, then putting the child on whole milk. The use of whole milk is commenced seemingly very early to one accustomed to the use of per-

* Read before the Chicago Pediatric Society, April, 1906.

centage modified milk. Professor Wright puts his children at two weeks of age upon whole milk. Personally, it has not seemed to me of any special advantage to put children upon whole milk so early, although I have fed several of the newborn babies in this manner, giving them whole milk by the end of the second week. In these children the growth has been rapid, no dyspepsia has developed and they were altogether satisfactory. That there is no contraindication for the use of whole milk at this time, when the child is capable of its digestion, I am convinced. In children whose digestion is such that they can not take whole milk, we have not persisted in their taking it, even toward the end of the first year of life. In a few cases at ten and eleven months the infants are using two parts milk and one of water.

In using citrate of soda, we have been extremists. We have not used it with any other method as percentage modified milk, whey or cream mixtures, but have adhered strictly to cow's milk, plain and diluted. We are enthusiastic as to its benefits, especially in dispensary practice, where one must deal with low mental capabilities and often with mothers who do not know the English language. The simplicity of the method, the ease of adaptation, the cheapness, and the inherent faith of the mother in the teaspoonful of medicine added to each of the baby feedings, are a few of the special advantages of this method. On account of the ready solubility of citrate of soda, we prescribe as many grains to the dram as we are giving ounces of milk to the child, giving a large enough mixture to last about a week. For example, an infant that is taking milk $\bar{3}$ iv, water $\bar{3}$ ii, citrate of soda gr. iv, six feedings each twenty-four hours, is given a prescription for:

R. Sodii citras.....	gr. exēi
Aquæ chloroformi.....	m. x
Aquæ destillate	3vi
M. et Sig.: One teaspoonful to be put in each feeding.	

We find that there is a possibility of a fungoid the same as in dilute bromid solutions, and for this reason we add the small amount of chloroform water.

The following twenty cases have been taken from the cases seen since my last report of cases of infants fed by this method:

CASE 1.—Aged 5 months. Child was brought to dispensary because of diarrhea; was restless and irritable; eructations of gas frequent; bowel movements green, watery and of a foul odor; abdomen distended, tympanitic; typical facies senilis; temperature, 102° F.; weight, 7 pounds; birth weight, 7½ pounds. Diagnosis, marasmus. Treatment: Calomel, gr. 1/10 each hour for six doses; gruel water for twenty-four hours; then was put on milk and water, each, one ounce, with one grain of citrate of soda. This, a most hopeless case, improved from the beginning of the treatment, the increase in weight being constant. In the first ten days there was a net gain of one pound.

CASE 2.—A newborn baby, who, on account of deformed nipples in the mother, was put upon artificial feeding from birth. The birth weight,

7½ pounds. For the first week baby was given milk and water, each, one ounce, citrate of soda, one grain, every two hours during the day and twice during the night. The second week the baby was put on milk, two ounces; water, one ounce; sodium citrate, two grains. At the beginning of the third week the child was put on whole milk. The baby is now 6 months of age, weight 16 pounds, has had no attacks of indigestion and, in so far as can be seen, the development is normal.

CASE 3.—Child 6 months of age. One week ago child developed an acute diarrhea, with rapid loss of weight; bowel movements, 10 to 12 a day, green, watery and offensive. Treatment: Calomel, one-tenth of a grain, every hour for six doses, followed by a dram of castor oil, with colonic flushings twice each day. Diet of albumin water for forty-eight hours. On the third day patient was given two feedings of milk and water, each, two ounces; sodium citrate, two grains. On the fourth day four feedings of this mixture were given, and on the fifth day regular feedings were given. The amount of each feeding was gradually increased, and on the tenth day patient was taking milk, four ounces; water, two ounces; citrate, four grains. On the seventeenth day patient had regained her maximum weight and was put upon whole milk, six ounces; sodium citrate, four grains. This was continued for a month, when the citrate of soda was diminished to three grains. This amount continued for two months, when the citrate was discontinued.

CASE 4.—Four months of age, breast fed six weeks, then put upon condensed milk; child was brought for diarrhea and vomiting; had had twelve bowel movements the previous day, green, watery and offensive. Treatment: The initial treatment, calomel and gruel water, was given for the first twenty-four hours, then milk and water, each, two ounces; sodium citrate, two grains. Third day was improved; no vomiting; seventh day discharged and put on a diet of milk, three ounces; water, one and one-half ounces; sodium citrate, three grains.

CASE 5.—Six weeks of age; diet, cow's milk, diluted with equal quantity of water; bowel movements green, watery, foul and at times streaked with blood; colic; vomited curds after each feeding; was fed three ounces of the mixture every two hours. After the routine initial treatment for the first twenty-four hours, patient was put on milk and water, each, one ounce; sodium citrate, two grains. Vomiting ceased; bowel movements, two or three each day, of good color and consistency. At the end of the first week the quantity and percentage was increased to milk, two and one-half ounces; water, one ounce; citrate of soda, three grains. Child had a net gain in fourteen days of two pounds.

CASE 6.—Age, 10 months; birth weight, 6½ pounds; breast fed 8½ months; persistently constipated for the past six weeks; has been given an egg morning and evening, with two feedings of cow's milk between each twenty-four hours; is brought for diarrhea and vomiting. Child is poorly nourished; weight, but 11 pounds. Treatment: Initial treatment of calomel and gruel water; the third day was put on milk and water, each, four ounces; sodium citrate, four grains. On the seventh

day, temperature, 104° F.; diarrhea; weight, 11 pounds and 4 ounces. The citrate of soda was increased to eight grains. Tenth day child improved, no temperature; seventeenth day, weight 12 pounds; the diet increased to milk, four ounces; water, three ounces; citrate of soda, four grains. The twenty-fourth day citrate of soda was reduced to four grains.

CASE 7.—Child, aged 5 months. Diet, proprietary food, condensed milk, etc. Weight at birth, 7½ pounds; bowel movements constipated, light colored, hard. *Status præsens*: extremely emaciated, apathetic, skin dry and cool, hangs in loose folds on limbs; temperature, 97.10° F.; weight, 6½ pounds. Treatment: Calomel, one-tenth of a grain; ipecac, one-sixteenth of a grain; bicarbonate of soda, one-half grain, one to be taken every six hours; colonic flush of normal salt solution twice a day. Diet, milk and water, each, one ounce; sodium citrate, one grain, every three hours, with albumin water *ad lib.* Third day improved; weight the same. Tenth day improved; weight the same. Increased diet to milk, three ounces; water two ounces; sodium citrate, two grains. Eleventh day improved; weight, 6¾ pounds. Increased diet to milk, three ounces; water, two ounces; citrate, three grains. Twenty-fourth day improved; weight, 6¾ pounds; bowel movements normal in frequency and color. Thirty-first day improved; weight, 7¾ pounds. Diet increased to milk, four ounces; water, two ounces; sodium citrate, four grains, every three hours. This was an early summer case, and the child did not have an acute attack of indigestion during the hot weather, but made rather a constant growth.

CASE 8.—Aged 4 months; weight 7 pounds and 12 ounces; breast fed; child has lost weight for past two months; no diarrhea or vomiting; mother's milk analysis shows fat 4, albumin 1.5, sugar 6.5. After an unsuccessful attempt to modify the mother's milk so the baby could thrive upon it, child was taken from the breast and put on milk, two ounces; water, one ounce; citrate of soda, two grains. The third day child improved; facies better; less restless. Tenth day improvement; weight, 8 pounds and 5 ounces; bowel movements hard and pasty. This case developed constipation, which was overcome by the use of olive oil in dram doses given at night.

CASE 9.—Child, aged 5 months. Diet malted milk. For past week child has refused food. Mother brings her for advice as to what to feed child. Bowel movements normal; weight, 8½ pounds. Treatment, milk and water, each, two ounces; sodium citrate, two grains, every three hours. Fourth day improved. Thirty-second day weight 11 pounds.

CASE 10.—Child, aged 10 months, bottle fed with modified certified milk. Weight at birth, 8 pounds; present weight, 13¾ pounds. Bowel movement yellow, frequent and pasty. Treatment, milk and water, each, eight ounces; sodium citrate, eight grains. Increase in weight was immediate and constant, making a gain of 6 to 12 ounces each week. At the end of the first month patient was taking whole milk with citrate of soda, one grain to the ounce. By the end of the second month child was taken off citrate of soda, the mother using it after this at any time the child developed any indigestion.

CASE 11.—Child, 7 months of age, breast fed until three days ago, when it was put upon cow's milk; child developed diarrhea and vomiting. Treatment: After the initial twenty-four hours' treatment child was given milk and water, each, four ounces; sodium citrate, four grains. Third day improved; no vomiting; bowel movements, four or five a day, good color and odor. Seventh day improved; bowel movements, three a day; diet increased to milk, six ounces; water, two ounces; citrate of soda, six grains.

CASE 12.—Child, 10 months of age, breast fed four months, was then given proprietary foods. Birth weight, 8 pounds. Is said to have weighed 14 pounds at 4 months. The weight remained about stationary until the beginning of the past month, when she developed a severe gastro-enteritis with a rapid loss of weight. The physical examination shows child has four teeth, is apathetic, rachitic rosary, enlargement of ends of all long bones, emaciation extreme, weight 7 pounds, temperature 97.2. Treatment: Stopped all food for twenty-four hours, artificial heat applied. Bowels flushed with normal salt solution every six hours. After the first twenty-four hours was given rice water with the white of one egg a day for two days. Then was added milk and water, each, one ounce; sodium citrate, one grain; two feedings a day. The number and amount of feedings was gradually increased, and at the end of the second week the diet was milk, six ounces; water, three ounces; sodium citrate, six grains. The amount of milk was then gradually increased as the digestion improved. The citrate of soda could not be dispensed with until the child was 14 months of age.

CASE 13.—Eleven months of age, breast fed ten months, when it was weaned and put upon boiled whole milk. During the past two weeks developed a diarrhea, with ten or twelve bowel movements a day. Treatment: After the first twenty-four hours child was put upon milk and water, each, four ounces; citrate of soda, four grains, every four hours. Seventh day diet increased to milk, six ounces; water, three ounces; sodium citrate, six grains. Fourteenth day child was put on whole milk with citrate of soda, one grain to the ounce.

CASE 14.—Child, 10 months of age; fat, flabby baby; weight, 16 pounds. The diet was practically an exclusive oatmeal gruel one. The mother gave a history of the child's inability to digest either human or cow's milk. This case was put upon equal parts of milk and water with two grains of citrate of soda to the ounce of milk. After the first few days the child could digest this food. By the end of the second week the sodium citrate was diminished to one grain to the ounce of milk. This child had always been persistently constipated, the mother frequently giving three or four teaspoonfuls of castoria to bring about a bowel movement. Upon the diet of the cow's milk with the addition of citrate of soda, the constipation was relieved. This child is now 16 months of age. When the citrate of soda is not given, constipation develops so that it is still necessary to add the citrate of soda to the milk.

CASE 15.—Baby, 6 weeks of age, breast fed. This patient is brought

on account of vomiting of curds after each breast feeding. Treatment: A prescription was given the mother containing two grains of citrate of soda to the dram of water, with instructions to give the child one teaspoonful of the medicine after each feeding. This diminished the curds both as to size and amount vomited.

CASE 16.—Fourteen months of age; diet proprietary food. This child has never been able to digest cow's milk in any dilution. Patient was put on milk, six ounces; water, six ounces; sodium citrate, six grains, one feeding a day, this with varying success for about two weeks. After this time the number of feedings was gradually increased, and at the end of eight weeks child was taking whole milk, citrate of soda, grains one to the ounce as the regular diet.

CASE 17.—Eight months of age, breast fed, was weaned and put on milk, six ounces, water, three ounces; citrate of soda, six grains.

CASE 18.—Five months of age, breast fed. Is given a supplementary feeding of milk, five ounces; citrate of soda, five grains, two feedings a day.

CASE 19.—Child, six months of age, breast fed, weaned to cow's milk, six ounces; citrate of soda, six grains.

CASE 20.—Child, 3 months of age, breast fed, weaned on account of acute illness in the mother; put on milk, three ounces; water, one ounce; citrate of soda, three grains.

These cases were all brought for medical attention. Most of them were sick babies when first seen. In our treatment of these cases we have used the regular treatment for clearing up the acute disorder with which the patients were suffering. We have not used the sodium citrate with milk in our cases of milk dyspepsia any earlier than we should have put them on to a percentage modified milk had we been using that method. We have put all patients coming under our observation under this method of feeding. Now after the use of this diet for the past three years we are ready to give it our unqualified indorsement as the most satisfactory and successful method of artificial infant feeding. Every child has taken and could digest milk with the addition of citrate of soda. These patients were all weighed every week and show a higher growth rate and so far as we can determine a normal development. In most of the cases there is an increase in the amount of urine excreted. In the cases where it was necessary to give a higher proportion of sodium citrate than one grain to the ounce, there frequently was developed an increase in perspiration which disappeared when the citrate was diminished to one grain to the ounce. Constipation is a factor in the cases fed by this method as it is in most methods of feeding. In these cases the constipation could usually be relieved by a dram dose of olive oil each night. We do not claim for this method of feeding that it is the only way nor is it a cure-all, but of this we are convinced, that it is a valuable acquisition to our feeding of infants. That it is especially of value in dispensary practice where one has to contend with many disadvantages. Its simplicity, cheapness and ease of administration allows us to prescribe it in

all cases. Of the advantages of this method of feeding it certainly renders the curd of cow's milk finer and more easily digested, we keep better in touch with our patients, having the child brought for medicine once each week, when the child is weighed and we can get the mother's report of the child's progress.

THE SOCIOLOGIC DUTY OF A MEDICAL SOCIETY TO ITS MEMBERS.*

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There are so many sociologic medical questions of great importance for the medical societies to consider that one wonders often not where to begin, but that the beginning should be so late. Until within a few years medical societies have consisted chiefly of a certain number of the older members of the profession. The young man, if he joined at all, sat in the rear seats at the meeting to be seen but not heard, except in rare instances when preluded by a timid apology for his temerity he joined in the discussion. The older members of such a society were usually very busy with their large consultation practices. Original work was almost entirely unknown and what little was done was usually done by a zealous few, among the younger men still without incumbrance, the vast majority of the general practitioners being handicapped by having neither laboratories, means nor encouragement.

To-day the medical societies invite all to join and ask every member to present his observations and ideas; his remarks in discussion are courted; he is expected to become an active, ethical society member and to remain so unto his life's end.

It is continually impressed upon him and with truth that all through the years of practice after college the medical society is of the utmost necessity for professional attrition and consultation with younger, contemporary and older members. It is the place where all unite to freely discuss and compare experiences; in a word, to hear the different interpretations of the meaning of the often occult medical sentences and become acquainted with a larger number of authorities than it would be possible to do alone; for to study medicine by college lectures alone is much like attempting to translate literally the idioms of a foreign language. Besides the scientific papers and discussions, the societies have given much careful attention to public hygiene and legislation; an attempt has also been made to educate the masses to understand better modern prophylactic medicine; also much consideration has been given to combating the harm caused by the so-called proprietary medicines, as well as many other things of general benefit to the community at large, always with altruistic disregard of their own individual interests.

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While the medical societies do all this for the public, there is also much opportunity to strengthen and advance this good work by better caring for the welfare of their own members beyond just the simple advice that the doctor should always be ethically patient and thoroughly imbued with the spirit of scientific altruism.

When we begin to discuss altruism, we must first ask why this term is so frequently used, especially by our medical societies which, though they have done much for science and the public, sociologically, have done little to protect their own members. Nothing begets altruism so much as a knowledge of the preservation of one's own rights. Are there not sociologic duties and needs of our members which, if cared for properly by the medical society, would allow you much more leisure for scientific study, for self-improvement, for altruism? Let us review some of the conditions which at present prevail. Neither state, county nor city (with their vast riches) do anything for medical advancement beyond paying the board of a few poor patients to whom it expects an already overburdened (tax-paying) medical profession to extend free treatment. Most of the advantages such patients might be in the way of study, research or teaching are so curtailed by the layman that certain bodies of the profession are forced to unite to maintain hospitals and dispensaries at their own expense for college teaching and improvement purposes. Even some of the pay hospitals advertise room at \$15 to \$40 weekly, special nurse for an extra \$25, with the added inducement of medical and surgical and obstetrical attendance by the staff free. These same hospitals beg openly for donations from wealthy members of the community and demand to go tax free because of their charity beds. It is certainly conceded that, in some of our large cities, 50 per cent. of the total population take advantage of free treatment. The independently well-to-do (who could pay cash) push out the worthy poor, thereby giving us not only an inferior teaching material, but demoralizing those who can and should pay and depriving many of those with no means to pay, of the free help that should be theirs. One among many instances of the above was the wife of a Chicago business man whose estimated wealth is at least \$250,000 receiving free dispensary treatment. Besides the regularly accredited institutions, there are many irregular ones, e. g., elub dispensaries, vibratory institutes (many barber shops even doing the latter work for uremic and other headaches), etc., whose license to exist legally and morally is very questionable, to say nothing of preying upon a credulous public. These places need investigation and many should be suppressed. Before leaving the subject it might be well to mention that there are probably many unlicensed practitioners and midwives. The unlicensed should be routed out and the licensed midwives should be properly registered and published and kept track of, and re-registered if the name is changed.

I am sorry to say that some of our college teachers and others have student friends and nurses who give anesthetics and do other illegal graduate work, the fees for which really should go to a licensed practi-

tioner only. If to beg on the street, asking alms, is against the law, to receive free treatment (in hospital or dispensary), for which one can well afford to pay, is both legally and morally wrong.

While worthy lay objects of charity, begging a few much-needed dollars, are rigidly and humiliatingly investigated by the Bureau of Charities, people well able to pay, beg openly for free hospital and dispensary treatment, board, lodging and washing and are often never questioned. The foregoing charity medical treatment is only a tithe to that done willingly, "free gratis," by each and every member of the profession in his daily rounds by making necessary charity calls. The business man who gives, gives only of his excess of accumulated wealth, the professional man who gives, donates a portion of his daily bread. This vast charity, thrown around indiscriminately, receives little, if any, recognition from either laity or press, except perhaps from the beggar who always picks the doctor's sign as the house to call for alms. All such charities should be properly and carefully supervised and the name and address of the recipient properly filed for future reference and investigation. If credited to the profession, the free work to the worthy poor alone would be found to exceed all other charities combined, and, though the difficulties of regulation may seem insurmountable, the medical society should not rest content with the present loose methods.

The reply to the remark that a very large proportion of the free-treatment patients can and should pay is that they are needed for clinical teaching. This is untrue; they only push out the worthy poor and are too independent and inconstant to make good teaching material. The truth is they are not needed, because we have more than enough worthy poor for good teaching if they were all properly utilized. While it is gratifying to the ambitious clinician to have a well-attended clinic for teaching, it is a notorious fact that many of our well-attended dispensaries, medical, surgical and obstetrical, with large numbers of well-dressed patients, are never used for teaching purposes at all. It is certainly not altruism for the society to ignore the interests of the individual members by allowing people able to pay for treatment to have it free and retard the advancement scientifically and morally of the whole profession by keeping it unnecessarily so much the poorer. When the social settlements protest by writing to medical journals against the demoralizing and pauperizing effect of free dispensaries is it not time for the medical society to act? While those who have consultation practices do not escape needless loss from this source, those who most feel such sociologic discrepancies are the general rank and file of the profession. These latter frequently find much difficulty in making more than a bare living and often can not do that. Being thus deprived of the means, is it any wonder that so few city practitioners take postgraduate courses? Yet they are expected to be ethical, scientific and altruistic members, and any lapse from grace on their part is at once attributed more to a lack of moral force than the stress of the foregoing circumstances.

The general practitioner, in his turn, has from necessity tried various devices to cope single handed with these adverse conditions by introducing questionable methods of his own, such as empirically dispensing tablets to save losing a dollar patient by a repeat, thereby goading the druggist to the very dangerous and malicious practice of counter-prescribing to make up for loss of trade; the undertaking of the care of the most serious medical and surgical cases unaided, by denying himself often much needed consultation or laboratory aid, bidding low for contract practice to wealthy corporations, advertising in a semi-unprofessional manner or, indeed, from actual need, resorting to criminal practices. Another matter of importance is that more notice should be taken of attacks by the lay press, who often viciously attack a regular member of the profession unwarrantedly while the advertising quack is protected. Recently a leading Sunday article appeared in the *Chicago Tribune* entitled "Let the Coroner Investigate." It told of the lessened death rate from diphtheria since the administration of antitoxin by competent men and, after speaking disrespectfully of the profession as a whole, it actually advised that the coroner investigate each death from that disease, and, if the doctor be found negligent, that he be sent to the penitentiary, or at least that his practice be ruined as a warning to others.

A sensation was recently created by the arrest of a physician for charging \$100 for an office consultation. How true or distorted the sensational statements were is difficult to say, but we have all heard fabricated stories of members of the profession in which there was not an iota of truth many times.

In a recent Sunday *Chicago Tribune* appeared a sensational account of the purchase by a number of charitable women of a false leg for a 19-year-old girl who, due to malpractice (an overdose of medicine at the age of 2 years), had the growth of one leg stopped so that it was useless and later had to be amputated. While the absurdity of this may be obvious and laughable to you, it is only one more example of malpractice to the press-devouring public. The notice of the institution of a malpractice suit is rarely without insinuating remarks against the doctor whose reputation is hurt more thereby than by the actual trial itself, the paper virtually trying the doctor, even though it be absolutely ignorant of the facts. A polite but firm note from the public relations committee calling attention to the injustice of an unwarranted attack and often to its absurdity also would soon cause these to cease or at least to be confined to the facts.

Such matters as this may be beneath our dignity to notice, but all statements of the lay press have a very marked influence on the attitude of the general public toward the regular profession and are accepted as truth by the laity. Such conditions demand that wrong impressions and statements about members be rectified promptly and, if the member's position be a just one, he should be immediately defended by the medical society as a whole.

A little more moral courage in this direction on the part of the profession would elevate them in the eyes of the public and help stem the tide of misguided feeling and reversion to quackery and so-called faith healing and materially aid the present very inadequate public lecture courses in giving a right idea of the present medical status. A public lecture undoubtedly does some good to tens, but the public newspaper maligning the profession is read and believed by hundreds of thousands. We have tried silence in these matters long enough and we should change, but the committees of the Chicago Medical Society are already overburdened with their routine work. The malpractice suits pending in Chicago alone are over 87 in number. They are often begun on the most flimsy pretexts, from a desire to avoid payment of a bill, to a genuinely inflamed notion of improper (often free) treatment, or indeed it may be a case of pure blackmail incited by an unscrupulous attorney or, lastly, one is ashamed to relate, incited by the thoughtless remarks of some member of our own profession or, indeed, an ethical member of our medical society in good standing who is called in to see the case and who improves the opportunity (always truthfully we hope) for himself, but often unfairly and disastrously for his confrère, and, indeed, also often disastrously for the patient.

Suits are always disastrous to the profession, as a whole, but especially to the man sued, because its publicity injures his reputation and practice, the worry injures his health and capacity for good work. In Chicago the protection against malpractice is being very ably maintained by the medical society, at present due to the good offices of Dr. W. A. Evans and the committee, at great cost of time to them. How much longer this committee will be able to cope, without help, with their ever-increasing duties is hard to say. If one suit be decided against a doctor it means that twenty or thirty new suits are started immediately in any large city like Chicago. Fortunately, due to the good work of the committee, the Chicago Medical Society has been able to pass a year without a single adverse verdict. In Chicago, with the scientific inducements alone, the medical society grew but very slowly each year and consisted of only about one-fifth of the practitioners of the city. The city, covering so wide an area as it does, made it difficult for men residing in the outskirts to attend. Also many men practicing in districts close to the central society meeting place would not give the time; indeed, some members in good standing, moving into outlying districts, allowed their enthusiasm and memberships to lapse, and in some cases, indeed, altruism and ethics being routed by bitter experience, the embryo scientist became simply a practitioner, with medicine as a business, or even took to advertising or questionable methods. The division of the city into geographical districts, with a subsociety for each district, met at first with lukewarm response. Some district societies started with 8 or 10, and others with more members, but the attendance usually at first only represented about one-tenth of the men in a district. The number has grown gradually, if less slowly, each year, due to better canvassing.

Despite these inducements, much apathy continued and arguments were often met with the remark, "I can be ethical without joining the society and paying dues and spending time that I can ill afford. What do the society benefits amount to?"

Under the presidency of Dr. W. A. Evans the society instituted protection from malpractice for members in good standing. This sociologic advancement, which has proved a great success, was the very thing the outside members of the profession were ready for; it was something for something, and men who were never before in the society joined and after joining began to attend and interest and improve themselves and become acquainted personally with and understand and respect men in the same profession whom they had known by sight only, though they were resident but a block apart since many years.

The watchword for the coming year, given out at the first Council meeting by Dr. G. W. Webster, the president, was, "The Chicago Medical Society for its Members," which is a further move in the right direction.

That the sociologic interests of the members in good standing be, if possible, still further considered is especially welcome, as the splendid work done by the Organization Committee has surpassed all expectations and made things previously impossible now capable of consideration.

The work done by the branch societies to-day is quite equal in scientific value to that done by the main society and often by men who until recently were not members of or attending any medical society, yet the number of non-members who can not be induced to join and members who do not attend is too large. There is need of further inducement not only to enroll themselves, but after enrollment inducements should be held out to become actively interested and attend meetings and to study, to take postgraduate courses for self-improvement scientifically. To encourage and assist this latter in the entire profession is as much the duty of a medical society (in order to maintain the highest professional standing and with it the respect of the laity) as it is to give our attention to hygiene and other duties to the public.

That the medical society members wish for further sociologic advancement is evidenced by the referendum ballot in June last, when 407 voted for the institution of a bureau, out of a total vote of 655.

That there is need of some central place for the ever-increasing work of the committees of the society is amply evident to all thinking members, especially if the Council attempts to rectify some of the abuses that I have taken the liberty to portray, and the justification for such an attempt can be found in the conduction of the medical defense (which is now being extended to the state) and the state medical journal, both of which are a credit and invaluable to the society; while such things as the blue-book, which is only under the auspices of the society, still contains the names of advertising men and others, side by side with members, is ample evidence that 'only under the auspices' is not to be compared with complete ownership and control.

COMMERCIAL ELECTRICITY AND ITS DANGERS.*

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We are living in the "Electric Era" of the world's history, for within the past twenty-five years, the uses of electricity have multiplied in such an infinite variety of ways, and have become such necessities of every day life, that we may truly say, in large cities at least, that we are literally surrounded by this unknown but potent force. While the rapid development of this energy for commercial purposes has greatly added to our well being and comfort, it has also unfortunately vulgarized a great variety of hitherto unusual accidents, and it shall be our endeavor to bring out the etiologic factors of the commoner electric injuries and to outline their prophylaxis and treatment.

The two great varieties of electricity are known as (1) static, i. e., discharge of electricity between two clouds or between a cloud and the earth; (2) dynamic or current electricity. All commercial electricity is dynamic, and this type of energy will alone be considered in this paper. The dynamic current may be produced by chemical means as in a voltaic cell or battery, or by electro-magnetic induction, as in the dynamo. The volt or unit of pressure or electro-motive-force, the ampere or unit of current strength and the ohm or unit of resistance are too well known to need further discussion. It is also well to remember the definite relation which exists between current strength, resistance and electro-motive-force, known as Ohm's law, which is that the strength of current is equal to the electro-motive-force divided by the resistance. Other units, such as the Coulomb, Watt and Farad, while frequently referred to in commercial parlance, are not such important terms to remember.

The effects of a discharge of electricity may be (1) luminous; (2) heating; (3) mechanical, as in lightning discharge; (4) physiological, as in a shock; (5) electrolytic, as in plating; and (6) magnetic. Commercial electricity, with few exceptions, is usually derived from the dynamo or magnetic discharge. An electric pressure of 500 to 550 volts has become well established as the standard for electric traction, whereas in street lighting, the standard arc lights, requiring a current of eight to ten amperes at fifty volts pressure to each lamp, are frequently hung in circuits of fifty, so that in accidental short-circuiting, an extreme voltage pressure of 50x50 or 2,500 volts may be liberated. While shocks are in reality caused by N. amperes current strength, we habitually speak of N. volts as having passed through a person's body. This apparent misuse of terms is due to the difficulty or impossibility of computing the amperes without knowing the resistance in ohms of the individual at the time of the accident. The dynamometer will register the pressure or E. M. F., but as the human body will, under dissimilar conditions, offer a resistance which may vary between 500 and 200 ohms,

* Read before the North Shore Medical Society, Oct. 2, 1906.

the impossibility of computing the shock in amperes becomes self-evident.

The current used may be either direct or indirect, the choice of current being largely a matter of expense and convenience. In general, it may be stated that the direct current is the more dangerous to both employes and public, because it only requires one path or wire to form a short circuit, whereas in the indirect or alternating current two wires or shunts are necessary to short circuit the current. On the other hand, the higher voltage of many alternating currents would increase the mortality of an accidental shunt. As far as the effects on the human body are concerned, there is probably very little difference between a direct and an indirect current of equal strength, short circuited under identical circumstances. Aspinall¹ believes that the after effects of a direct current shock are worse than those due to the alternating current. He also noted that, if at the time of the accident, the live wire or rail was not or could not be gripped by the hands, a direct current would knock the victim down, whereas an alternating current would draw him towards the live wire; where the wire or rail is gripped, the reverse holds true. The experience of several employes of the Northwestern Elevated Railway, fully corroborates Aspinall's observations. Southwaite² reported the case of a workman who formed a shunt while examining an alternating current dynamo. He was found fixed to the machine in a condition of tetanic spasm, back in opisthotonos. Green³ narrates a fatal accident occurring to three horses drawing a wagon load of bar iron. Passing near a trolley pole, a short circuit occurred and the horses were seen to be as if magnetically drawn towards the pole where they all fell dead. In this case, the current was an indirect one, of only 100 volts pressure. According to Edison,⁴ horses are more easily killed by electric currents than are men, because they have four contacts on the ground instead of two and are iron shod.

Dangers of electric traction: The majority of surface or elevated traction companies now use a direct current of 500 or 550 volts pressure, having an enormous amperage. It is fortunate for the safety of public and employes that no higher pressure is, at present at least, needed. My observations have all been made on the Northwestern Elevated Railway in Chicago, where a direct current of 550 volts pressure is used, with the third rail system. Inspired by the experiments of Trotter⁵ and the reassurances of several practical electricians on the road, various means were taken to test the actual dangers, if any, of shocks of 550 volts pressure. Trotter emphasizes the importance of (1) dry weather, (2) dry clothes, (3) dry skin, (4) no nails in the shoes, in order to maintain body resistance at a maximum. Resistance is almost all at the skin and varies with the thickness of the skin. It has been estimated to vary between 10,000 and 40,000 ohms (Staples⁶). Trotter's estimates were:

1. Aspinall: *Lancet*, 1902, p. 660.

2. Southwaite: *Brit. Med. Jour.*, 1901, p. 573.

3. Green: *Jour. Comp. Path. and Therap.*, Edinburgh, 1904, p. 246.

4. Edison: "Electricity in Modern Life" (Tunzelmann).

5. Trotter: *Lancet*, 1902, p. 809.

6. Staples: *Northwestern Lancet*, 1904, p. 277.

(1) from finger tip to finger tip on dry metal and under 100 volts pressure, 2,000 ohms; (2) from hand to hand when grasping two pieces of trolley wire, 5,000 ohms; (3) between body and earth or an iron rail through the sole of foot, stocking and boot, 45,000 to 200,000 ohms. With worn out and wet shoes, the resistance fell to 13,000 ohms.

In order to clearly understand the practical significance of body resistance to electric currents, a few examples may not be amiss. Medical applications vary between one and twenty milliamperes, twenty being the usual maximum, three to eight 8/. being supportable, and as a rule ten m.a. painful. Let us take the common case of a lineman repairing a switch or rail on a dry day. His skin and clothes are dry, and his resistance is, let us assume, 20,000 ohms. He accidentally shunts the current flowing at 550 volts pressure, and is thrown down by the shock. He received at the time of the shunt 20,000 divided by 550 or 0.27 amperes or 27 milliamperes, a painful but not unendurable shock. The contact being only momentary, there may be no burn, or, if any, only one of the first degree. Had this same lineman been grasping a rail or cable at the time of the shunt, a tetanic contraction of his muscles would have prolonged the contact, thus decreasing body resistance and increasing both shock and burn. On a wet day, this same lineman, under otherwise identical conditions, would have received a shock of 550 divided by 500 or 1.1 amperes, which, if unduly prolonged, might prove fatal. The only fatality coming under my observation was that of an intoxicated citizen who, while waiting for a train in the early morning, fell on the track so that his head touched the live rail and both body and feet were in contact with the two running rails. He lay in this position for several minutes and was picked up dead, with his left parietal bone burnt through to brain tissue. Currents of 2,000 volts (Brownson⁷), 2,750 volts for ten minutes (Kiliani⁸), 2,800 volts (Mally⁹), have been reported, causing severe burns, which in two cases required amputation of a limb, but without fatal issue.

It is not my purpose to take up your time in recounting the details of the many tests made on the elevated tracks; I shall merely give you the practical results derived therefrom, which are as follows:

1. In dry weather, it is safe to place one foot on the live rail, even if the other foot is on a running rail; a lineman may even sit on the live rail with his feet on the running rail, providing his clothes and shoes are dry and not torn.

2. A disagreeable but not a painful shock is experienced if, while sitting on the live wire rail, the lineman touches a running rail with his hands. However, should he be handling an iron tool, a short circuit would result in an inevitable "flash burn."

3. The majority of accidents are the results of careless handling of tools, the workman not being careful to shift his position in order to avoid the danger of a shunt.

7. Brownson: *Am. Jour. Surg. and Gyn.*, St. Louis, 1897, p. 160.

8. Kiliani: *Ann. Surg.*, 1904, p. 434.

9. Mally: *Rev. de Chir.*, Paris, 1900, p. 321.

4. Wet weather or wet clothes greatly increase the danger of shunting and severity of the injury.

Pathology: The pathological changes are those of ordinary burns plus the peculiarly devitalizing effect of the electric current. Flash burns are of the first or second degree; burns due to the passage of an electric current through the body may be of any degree, depending on the length of contact and degree of resistance offered. Electric burns are, at first, dry, aseptic and indolent, followed later by considerable serous effusion and signs of moist gangrene. It is important to remember that electric burns are always more severe than is apparent on first examination. The slight blister may develop sloughing to the bone. There is always a charring of the epidermis; blebs only form in from twelve to eighteen hours. In flash burns involving the face, there is a severe conjunctivitis; occasionally we may have a sloughing of the epithelial covering of the cornea (traumatic keratitis). The eyebrows and eyelashes are rarely permanently destroyed. Regeneration of the epidermis is usually three or four times as slow as in ordinary burns. This slow healing is probably due to the penetrating action of the electric fluid (Oldright¹⁰). Weathers¹¹ reports a slough weighing two and a half pounds removed from a patient's lumbar region as the result of a prolonged contact. In case No. 7 N. W. El. series, a portion of the left parietal bone was burnt through, exposing brain substance. Sloughing principally affects the muscles and blood vessels and the blood does not appear to show any tendency to clot (Elder¹²). In fatal shocks, death is due to a paralysis of the respiratory center and is, therefore, a species of internal strangulation. This theory is supported by the clinical fact that artificial respiration will undoubtedly save many lives after apparently fatal electric shocks (Von Kratter¹³). Batelli, quoted by Chanoz,¹⁴ says that in fatal shocks the ventricles of the heart are in a condition of fibrillary tremulation.

Symptoms: 1. Shocks.—It is difficult to describe the mental sensation resulting from an electric shock. Many persons faint, others report having felt a sensation of impending dissolution, an "angor animi" followed shortly afterwards by various neurasthenic or hysterical manifestations. The railway employes rarely suffer from shock. Constant familiarity has so eliminated the element of fright that for him it is a physical injury or no injury at all. In persons unfamiliar with electricity and its manifestations, the effects of a powerful electric shock are essentially different from those experienced by the employes of traction companies. A passenger receives, independently of any electric shock, a fright as severe as that caused by a railroad collision. It is not probable that electric currents which do not induce almost instant death ever cause organic nervous disease (Bailey¹⁵). The functional disturbances

10. Oldright: *Dominion Med. Mag.*, August, 1905.

11. Weathers: *New York Med. Jour.*, April 2, 1898.

12. Elder: *Montreal Med. Jour.*, 1900, p. 18.

13. Von Kratter: *Seventy-seventh Deutsche Naturforscher u. Aertzte Congress.*

14. Chanoz: *Lyon Med.*, 1904, p. 693.

15. Bailey: "Diseases of the Nervous System," p. 373.

following electric shocks are those of traumatic neurasthenia. Transitory amaurosis (Heck¹⁶), tremors, paresthesias, tachycardia (Knapp¹⁷), loss of sexual power, etc., have been reported. Case No. 61 of my series was that of a young mechanic who grasped with his left hand a curved iron tubing inside of which were wires leading to a 32 candle power electric light. The insulation of the wire had become defective and the man received a mild shock. He fell down in his tracks and, when picked up, was found to have a paresis of the left arm. He complained of pain in the shoulder muscles, followed soon after by pain and tingling in the biceps. When seen in my office a few minutes later, the left hand and forearm were cold and clammy and the left radial smaller than the right. Complete anesthesia existed below the elbow but there was slight motion in the flexors and extensors. Reassurance, an internal placebo and vibratory massage restored all nerve functions in about half an hour, to his great amazement and gratification. The rapid clearing up of all symptoms probably prevented the development of traumatic neurasthenia in this case.

2. Burns. Immediate appearance: The skin has a dark brown color, is absolutely dry and often finely wrinkled up; to the touch it feels somewhat like parchment. As flash burns occur principally in the repair shops, it is often difficult to distinguish between burnt skin and unclean skin; the latter is however greasy and moist in appearance and never gives one that parchment like feeling which I consider so characteristic of a flash burn. Electric burns present a clean cut edge with no redness surrounding it (Hutchinson¹⁸). In burns involving the face, the eyebrows, eyelashes, mustache and any hair which is not covered by the man's cap or clothes will be singed down to the skin. There are no blebs to be seen for twelve to eighteen hours after the accident. The patients complain of numbness and tingling; sometimes of a dull throbbing pain. Notwithstanding the contrary experience of a few surgeons as Staples and Elder, I maintain that the pain of electric burns is not severe. It is important to differentiate between the often intense pain of traumatic neurasthenia and the mild pain actually due to an electric burn. The former is widespread in its distribution while the latter is usually limited to the areas actually burnt.

Treatment: (1) Instructions to employees.—Practical talks on electric shocks and burns were given in the shops to all the foremen. Whenever an employe of the road is unfortunate enough to become the medium of a short circuit by accidentally grasping the third rail, his co-employees are instructed to pry him off as soon as possible. The hands can be pried open with a piece of dry wood; the man's hold can be broken by pushing him away violently as by a sudden jerk; a dry coat can be folded up and used as a battering ram, etc. As a matter of practical experience, on a dry day, with dry shoes, and standing on wood, it is perfectly safe to seize a short circuited person by the shoulders and wrench him away; in rainy weather the hands should be protected by a

16. Heck: *Allg. Med. Centrbl. Zeit.*, 1898, p. 915.

17. Knapp: Quoted by Bailey, *loc cit.*

18. Hutchinson: *Med. Register, Phila.*, 1887, p. 102.

dry coat or cloth. Rubber gloves would be ideal, but they are never on hand, at least not in America, although English linemen and gatemen are provided with them and instructed to put them on in case of accident. The men are impressed with the fact that serious or fatal shocks can only occur as a rule when contact is made with bare skin or thoroughly wetted clothes, and is prolonged. In spite of these facts, Tollemer¹⁹ states that certain traction companies in France still have printed instructions on their cars, advising people not to touch a short circuited person unless the current is cut off or they have on rubber gloves. Such advice means that passengers and co-employees are invited to witness the electrocution of human beings. As soon as the man is "uncircuited," he is to be wrapped up in overcoats or blankets and, if unconscious, artificial respiration is to be immediately instituted and kept up until the surgeon arrives. The burnt areas of integument, if any, are temporarily dressed as in cases of flash burns, and the man is sent to the surgeon's office or to the hospital for subsequent treatment.

2. Flash burns: This variety of accident is a very common one and, while occasionally due to the employe's carelessness, is more often unavoidable. Actual contact between the third rail and ordinary rail is not always necessary for the production of an electric flash, provided a good conductor be in contact with the one and within a few inches of the other. This is especially true in damp weather when, as the men say, the rails are "juicy." The steel monkey wrench has frequently been the means of communication between the car and the third rail; the coupling hose connecting the motor car with the coaches often becomes detached, its free end striking or coming in close proximity to the third rail. Defective insulators are also responsible for short circuits. As most of these accidents occur while the employe is in a stooping position, the entire face is as a rule surrounded by the flash. The areas involved are quickly swathed in a soda bicarbonate solution (one teaspoonful to the pint of hot water). "Hands off" is the keynote of our instructions to the men. The habit of cleaning the face and hands with pieces of lint or towels resulted in several instances in removing the epidermis, with consequent infection of the burnt area. Since this rule has been enforced, flash burns have ceased to suppurate. Whenever the burn has been received some distance from the shops or surgeon's office, and the employe has attempted to cleanse the area involved and to wrap a handkerchief or cloth around it, suppuration has almost always occurred.

Active treatment: Before removing the temporary dressing, the injured man is cleansed of shop grease and dirt. The gauze dressings are then taken off and the extent of burnt area is ascertained. With pledgets of cotton moistened with ether, the skin immediately surrounding the burn is carefully cleansed of grease and dirt and a bland ointment such as stearate of zinc ointment with or without a small percentage of carbolic acid is smeared over the burn. Sterile gauze, cotton and bandages complete the dressing, which is changed every day for two or three days, after which a mild dusting powder is alone used. For

10. Tollemer: *Presse Med.*, Paris, 1902, p. 545.

conjunctivitis, I apply sterile vaselin and keep patient's eyes covered for two or three days with moist dressings. When the primary reaction is very severe, the patient is supplied with a solution containing adrenalin chlorid, grs. $\frac{1}{8}$; cocain hydrochlorate, grs. 2 to 4; boric acid, grs. 8 in an ounce of water, and instructed to instil this solution as long as the pain lasts. I have never seen a traumatic keratitis following a flash burn. Should infection occur, all ointments must be cast aside and moist boric acid dressings substituted. The patient is given a free supply of boric acid solution and instructed to keep the dressings constantly saturated. Unless sloughing is very active, the dressings are only changed every second or third day. Experience has taught me that we get the best results by using an extremely mild antiseptic, either in the ointments or wet dressings. Stronger preparations such as carbolyzed vaselin, picric acid, turpentine or corrosive sublimate solutions, retard Nature's work by increasing cell necrosis. If flash burns could all be sent to a hospital, the "open air" treatment advocated by Sneve²⁰ appeals to me very strongly. Sneve advocates leaving the burnt areas uncovered and freely exposed to air and sunlight, merely keeping the secreting surfaces dusted over with stearate of zinc powder and opening blebs and pustules as they form. By this excellent plan, the newly formed cells are not being torn off day by day with the dressings as they so frequently are under ordinary methods. The greatest value of this method lies of course in the treatment of burns of the second or third degree.

SUMMARY.

1. Electric burns are slower to heal than ordinary burns.
 2. They are comparatively painless.
 3. The immediate treatment is all important; non-interference at the time of the accident results in the maintaining of an aseptic wound; the habit of cleansing the burnt area in the shops or home is to be severely condemned.
 4. The mildest antiseptics are to be preferred as they do not interfere with Nature.
 5. A guarded prognosis should always be given.
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PARTIAL INFERIOR TURBINECTOMY AS PERFORMED WITH MYLES' NASAL FORCEPS.

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In hypertrophy of the lower turbinates of considerable degree or in cases with hypertrophy of a lesser degree, the nasal fossæ being abnormally narrow, a partial inferior turbinectomy is indicated, other measures of a less radical nature having failed.¹ According to Fein,

20. Sneve: Journal American Medical Association, July 1, 1905.

1. v. Tóvölvi Arch. f. Laryn., vol. xvii.

(*Monatsch. f. Ohrenh.*, 1906) in nearly all forms of hypertrophy of the lower turbinates, be they stationary or temporary, that is, either a hyperplastic or a transitory vasomotor enlargement, only one form of treatment gives permanent relief, viz., "bloody ablation." Cauterization with chromic acid, trichlor, acetic acid or the application of other astringents and vibratory massage, give but temporary relief, if the hypertrophy is of a mild degree. The galvano-cautery he reserves for occasional especially transitory vasomotor swellings, involving only the inner surface of the lower turbinate, with this restriction, however, that the process of healing is much slower and more wearisome. He further states, that unless we are careful, both during the operation and the after-treatment, synechiæ may result, which of themselves may cause even greater disturbance than the enlarged turbinate itself. While he would subject circumscribed enlargements of the upper surface of the lower turbinate to treatment, he strongly advises against the use of cautery in uniform thickening of the mucosa, since incalculable reactions and complications may result. Finally, he says, that as a rule, more can be accomplished in these cases by removing a portion of the middle turbinate or septal thickenings.

Forcells² states that, although the galvano-cautery still has its active supporters, resection is rightly gaining recognition, not only because by resection we gain our end much quicker, but there are some cases whereby repeated cauterization, the desired result is never obtained. Quoting McAuliffe,³ he says: "Partial inferior turbinectomy gives the best results for the cure of the major symptoms of chronic hypertrophic rhinitis."

Different methods are in vogue for resection of the lower turbinate. Let us first consider the snare. Its field of usefulness is limited to masses of soft tissue, especially at the posterior end of the turbinate. In a large majority of cases, it is necessary to remove a portion of the lower turbinate bone itself, together with the hypertrophied mucous membrane, in order to gain the desired result. Rindfleisch,⁴ out of a total of 627 conchotomies, cites but 13 cases where soft tissue alone was removed.

Curved scissors are used by a great many operators, but, that they are not well adapted is shown by the numerous attempts to remedy their defects. Amongst others, v. Tovölgyi mentions Holmes, Beckman, Rauties, Prince, Creswell Baber, Hartman, Heyman, Fein and Schoetz. Mention should also be made here of Casselberry, Ingals, Herzfeld, Potters, Seiler and Gruenwald. v. Tovölgyi uses a straight scissors, whilst Forcells uses a straight forceps and v. Voss a curved forceps. McAuliffe uses a beveled saw.

Let us consider the forceps. The advantage of Myles' forceps over the scissors are that they are less bulky and that they do not open like scissors but operate on the alligator principle, consequently causing little

2. *Monatschr. f. Ohrenh.*, 1905.

3. *Laryngoscope*, February, 1905.

4. *Monatschr. f. Ohrenh.*, 1905.

obstruction to the field of operation. This is of the greatest importance, since the amount of tissue to be removed is under constant view. Sufficient tissue must be removed in order to give the patient relief from his symptoms. On the other hand, if the greater portion of the turbinate is removed, unpleasant sequelæ, such as follow total ablation, may result. "Subsequent molding of the turbinate and the preservation of the breath guiding function of its arch are most important factors in increasing respiratory comfort."⁵

Regarding this point, Fein⁶ makes the following statement: "The lower turbinate, considered as a whole, has a large influence on the course and quantity of air that passes through the nose."

Continuing, he says: "Knowing this, the operator must not be misled to remove in all cases so much of the turbinate as he can get hold of, since the absence of the same, as is well known, may cause other obnoxious symptoms for the patient." That this mistake is often made and that this methodical amputation of the lower turbinate has brought rhinological interferences into disrepute, must be admitted by every experienced specialist.

It is rarely necessary to remove more than one-half of the turbinate. In the majority of cases operated on, only one-third of the turbinate was removed. Rindfleisch,⁷ in his 627 cases previously mentioned, reports the following: Total ablation of the turbinate, 3 cases; removal of four-fifths of the turbinate, 26 cases; removal of three-quarters, 99 cases; removal of two-thirds, 66 cases; removal of one-half, 235 cases; removal of one-third, 123 cases; removal of one-quarter, 32 cases; removal of soft tissue only, 13 cases. In 30 cases there was no record. If the hypertrophy is of the vasomotor type, one must be content to remove the redundant mucous membrane only. If this vasomotor enlargement involves but the inner surface of the turbinate, the cautery must be brought into use.

The operation for partial inferior turbinectomy, as performed with Myles' nasal forceps, is as follows: The nose is sprayed with a cleansing solution. If the patient is very sensitive, a weak (1 per cent.) solution of cocain is sprayed into the nose. After a few minutes, the regular application of a 5 per cent. solution of cocain may be made, with pledgets of cotton wrapped on a nasal applicator, which is gently passed along the medial surface of the turbinate. After the tissue has shrunk some, application is made along the outer surface or beneath the turbinate. Four or five applications of (1/1000) adrenalin are made in the same manner. Pressure is now made with the probe at different points of the turbinate, to test its degree of anesthesia, and, if any painful points are found, more cocain is applied. If, after the first few applications of cocain, the patient gets a little pale, it is best to have him lie down on a table, when, as a rule, in a few minutes, he will feel better, and the application may be resumed. The turbinate having been completely

5. McAuliffe, *Laryngoscope*, 1905.

6. *Monatschr. f. Ohrenh.*, 1906.

7. *Ibid.*, 1905.

cocainized, the patient's head is supported in a perfect horizontal position. If the head is thrown back, too much of the turbinate is likely to be removed. Next we introduce the forceps, the male or cutting plate beneath the turbinate, the female plate resting on its inner surface. Occasionally it is more convenient to reverse the forceps. As much of the turbinate as is desired may be removed without withdrawing the forceps by carrying them back in a straight line whilst cutting. The instrument is then withdrawn.

The mass of soft tissue at the posterior end is removed with the cold wire snare. The patient is directed to blow his nose, so as to remove all severed particles of tissue. The cut surface is now mopped dry and, if necessary, more adrenalin is applied to check all bleeding. The entire wound is covered with a collodion dressing in the following manner: A rather thick layer of cotton is molded over the cut surface and is then saturated with collodion. Pischel,⁸ who first described this dressing, uses strips of gauze instead of the cotton. He applies the collodion with a small metal tube which has a rubber bulb attached. The advantages of this dressing over the gauze packing are: 1. It does not cause the patient any of that pain which arises from the pressure of the gauze packing. 2. It does not entirely occlude the nasal fossa, thus adding to the patient's comfort. 3. Postoperative temperature and complications are less frequent. In sixty consecutive cases where the dressing has been used, I was obliged but once to introduce a gauze packing a few hours later to check bleeding. Pischel⁹ reports 243 cases, with a perfect result in 233. It is advisable for the patient to remain quiet for the first twenty-four hours. The dressing may be left in from four to six days. To facilitate its removal, a little cocain is sprayed into the nose. The patient is now given an alkalin spray (preferably Dobell's Sol. dil.) to be used several times a day until healing is complete. Out of a total of 500 operations, prolonged scab formation or other unpleasant symptoms were not observed. Three cases developed an acute otitis media, and a few others developed an acute follicular tonsillitis.

The following is a résumé of cases as observed in Prof. C. M. Robertson's clinic: Chronic hyperplastic enlargement of both lower turbinates, 272 cases; chronic hyperplastic enlargement, involving one lower turbinate, 9 cases; vasomotor rhinitis, 22 cases. Associated conditions: Hypertrophy of both middle turbinates, 40; hypertrophy of one middle turbinate, 32; echondrosis and exostosis, right side, 36; left side, 39; deviation of septum to right, 16; left side, 13; synechia, 2; nasal polypus, 10; traumatic ulceration of septum, 4; specific ulceration, 3; chronic maxillary empyema, 3; acute frontal sinusitis, 4; chronic dacryocystitis, 5; adenoids, 41; chronic naso-pharyngitis, 32; pharyngitis sicca, 12; enlarged lingual tonsil, 19; enlarged faucial tonsils, 71; papilloma of right vocal cord, 2; chronic laryngitis, 25; chronic bronchitis, 9; asthma, 5; hay fever, 4; nasal hydrorrhea, 3. The following subjective symptoms were elicited: Obstructed nasal breathing, 138; mouth breathing, 48;

8. Jour. Am. Med. Assoc., 1905.

9. Ibid.

excessive nasal secretion with dropping into the throat, 116; dryness of nose, 32; nasal bleeding, 7; diminished olfaction, 5; excessive sneezing, 13; deafness, 25; pain in the ear, 6; tinnitus, 5; chronic sore throat, 41; tickling in the throat, 21; sensation of fullness in the throat, 29; frontal headache, 21; pain over the eyes, 11; chronic cough, 26; chronic hoarseness, 24; difficulty of speech, 7; incontinence of urine, 1; disturbed sleep, 10; lacrimation, 5.

In conclusion, I wish to say that the credit for having first made use of Myles nasal forceps, for partial inferior turbinectomy, belongs, as far as can be ascertained, to Prof. C. M. Robertson. The forceps may be used with equal facility for any enlargements of the middle turbinate, for which purpose, I believe, they were originally designed by Prof. R. C. Myles, of New York.

504 Cleveland Avenue.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY.

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NOVEMBER, 1906.

THE OTTAWA TENT COLONY.

The Ottawa Tent Colony has sent out to its friends and supporters a very neatly gotten up booklet describing the institution. The open air sanitarium is of much more interest to the members of the Illinois State Medical Society than perhaps any other institution, public or private, in the state. It is really an offspring of the state society, since it was the elaborate symposium on tuberculosis, held at the Bloomington meeting in 1904, that led to its establishment. Started primarily as an experiment and an object lesson, with the hope that it might eventually grow into a state institution, it proved so successful that when all hopes of a state tuberculosis institute were, for the time being, shattered in 1904, it was continued as a private institution. And yet it has not been conducted for money making, for even as a private sanitarium its main object was and is to demonstrate the curability of tuberculosis in this Illinois climate. It is hoped that, when the proper time comes, the state will recognize the

wisdom and unselfishness of the founders of this admirable institution, and will provide a state refuge for tubercular patients either on the site of the Ottawa Colony or at least modeled closely after it.

To those who have visited and been entertained at the colony, and who have stood on the wide veranda and gazed across the Illinois River and over the beautiful Illinois landscape, the little book issued by the managers recalls many pleasant memories. A more beautiful spot could hardly be selected. Certainly a more enthusiastic and devoted director could not be found anywhere. Tempering his enthusiasm with scientific moderation and his devotion with common sense, he is engaged in the great work of demonstrating that the worst disease of modern times can be conquered, not through drugs, but through good air, good food and rest. Through the good work of Dr. Pettit and other members of our State Society, the experiment begun and successfully carried out at Ottawa may yet serve as a model to many other state societies. It is earnestly to be hoped that each year of the existence of the Ottawa Tent Colony will be more successful than the last.

MEDICAL DEFENSE IN PENNSYLVANIA.

The Medical Society of the State of Pennsylvania has a medical defense fund which is managed by the Council, according to rules adopted at the last meeting held at Bedford Springs in September. Inasmuch as our State Society is about to undertake this work, we publish below the rules adopted by the Pennsylvania organization.

1. The Council shall, at each annual meeting, appoint an attorney at law for the term of one year as counsel for this Society.

2. The Council may, upon request, and in compliance with the conditions hereinafter named, assume the defense for the alleged malpractice brought against members of this Society.

3. The Council shall not undertake the defense of any suit brought for acts committed by a doctor prior to his qualification as a member of this Society.

4. Any member desiring to have the Society defend him in a suit for alleged malpractice shall present his case in writing to the censors of his county medical society, who shall advise him concerning the validity of the claim. A majority of the censors of his county society having submitted the documents in the case, and having certified in writing their approval of his defense, he may make application for defense to the Council, through the Secretary of the State Society. If the Council

shall approve his application, and undertake his defense, he shall then sign a contract, vesting in the Council the authority to conduct the defense of said suit, and shall make such other arrangements as the Council may require; provided that no compromise shall be made without the consent of the accused, and provided, further, that nothing in the foregoing shall conflict with united action in the defense by the officials of any component county society, or of any corporation organized for this specific purpose in which he may be insured.

5. The Council, by a majority vote of all its members, shall contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to furnish all medical expert services, and to pay all necessary expenses of the accused, excepting expenses for witnesses called to testify to questions of fact. Provided, that if the accused is insured in a corporation organized for the legal and financial defense of physicians, the foregoing responsibility of the Council may be divided with said corporation; or the member may be allowed a certain sum of money satisfactory to both Council and member, for part of his defense expenses, and the Society shall be relieved of all responsibility. The Council shall not obligate the Society to the payment of any damages awarded by the decree of court or upon compromise.

6. The Council shall in each case name the sum for the compensation of the attorney.

THE QUESTION OF OSTEOPATHS.

The status of osteopathy is likely to be brought before the courts by the action of the coroner of Adams County, who recently appeared in Springfield to question the right of an osteopath of Quincy to sign a certificate of death for a patient, under osteopathic treatment, who had died from typhoid fever. We believe this is the first time this point has been brought up. It is certainly high time that the standing of these practitioners should be settled and the limitations of their practice defined. It is an open secret that they do not confine themselves to the limitations prescribed for them by law, but are practicing medicine and surgery, in many cases, to the full extent of the term. We sincerely hope that the Adams County coroner will push this matter to its legitimate conclusion and determine now and for all time whether or not osteopaths can trifle with human life in the practice of their absurd specialty.

IOWA TAKES UP THE JOURNAL IDEA.

With the July issue of the *Iowa Medical Journal* it became the *Journal of the Iowa State Medical Society*, and this state thus abandons

the annual volume of transactions and enters the field with modern methods in reaching the members of that large and important organization. Fortunately, an arrangement was made with the journal which had a long and honorable record, and it is to be hoped that the new plan will prove beneficial to the members of the state society. We are glad to welcome the *Iowa Journal* to the ranks of those publications representing state societies.

CORRESPONDENCE.

INSURANCE EXAMINATION FEES.

GALESBURG, ILL., Oct. 9, 1906.

To the Editor of the Illinois Medical Journal:

I inclose a copy of a resolution that has been passed by a number of the county societies in the state relative to the relationship of the members to the insurance examination fees.

I am inclined to recommend this form of action by the Jo Daviess County Medical Society, because it pledges each physician in the county, on the basis of a signed promise, as to what he will and will not do. The difficulty with the ordinary resolution relative to obtaining the concerted action of a large body of men is that the resolution is usually passed at a meeting where only a small part of the membership is present. Those that are not present sometimes have difficulty in knowing whether all of the members will really be bound by its provisions. As a result many good resolutions fail of their just intentions. This is obviated, in the largest measure, by obtaining the signature of every legally qualified practitioner within the confines of the county to the terms of the resolution. It can hardly be questioned that if a given practitioner in any county was sure that every other practitioner would live up to the provisions of such a resolution as this he would be only too glad to remain loyal to his fellows in their stand against what is a most unjust act upon the part of the New York insurance companies.

The only part of a resolution such as this which can be at all questioned is the last clause. Whether moral suasion is not, after all, a more desirable method of accomplishing a reform than possible ostracism must be left to the judgment of the counties who in the future will act upon this and similar matters that must come up for the good of the majority. There is need of laying especial stress, it seems to me, on the absolute necessity of each individual being loyal to the action of the majority of his fellows.

Some of the worst mistakes on the part of physicians is the lack, too often, of this very loyalty to a principle which, if adhered to, would push up the whole profession. Again, a small minority in this way will

sometimes delay what would have been for the good of all had it been enthusiastically adhered to by all.

Permit me to add that, in so far as it is possible for me to do, I want to visit as many county societies as I can during my term of office. Unfortunately, there are too many county societies on paper only. A strong organization should be, and finally will be, in existence in each county of the state. I wish it were the rule with the secretaries of the county societies to make provision for the attendance of the Councilor of their district at each of the meetings. Many times these meetings are held, and the Councilor, who usually has no means of knowing when it occurs, learns of the meeting weeks afterward. This is a distinct loss to the organization as such, and should not be allowed to occur.

Sincerely,

J. F. PERCY.

JO DAVIESS COUNTY RESOLUTIONS.

Owing to the reduced fees that the Insurance Companies have been imposing upon the physicians of the country;

The Jo Daviess County Medical Society, in regular session assembled in Warren, Illinois, July 12, 1906, passed and subscribed to the following resolution:

Resolved, That we, the undersigned members of the Jo Daviess County Medical Society and all other reputable physicians of said county, do hereby agree by subscribing our names to this resolution, that we will not make an examination for any old line life insurance company for less than five dollars (\$5.00) nor for any mutual or fraternal insurance company for less than two dollars (\$2.00), and that any physician who would violate this resolution should be deemed unworthy to be met in council.

E. M. BENCH, Pres., Galena, Ill.

A. F. BUCKNAM, Warren, Ill.

J. C. RENWICK, Warren, Ill.

A. C. CZIBULKA, Warren, Ill.

U. S. G. KELLER, Warren, Ill.

S. H. HILLIARD, Warren, Ill.

C. E. WRIGHT, Scales M'd, Ill.

G. E. MILLER, Hanover, Ill.

F. W. BOOTS, Hanover, Ill.

G. H. COTTRAL, Hanover, Ill.

PHILIP ARNOLD, Elizabeth, Ill.

A. T. NADIG, Elizabeth, Ill.

G. M. TYRRELL, Elizabeth, Ill.

S. G. KREIDER, Lena, Ill.

T. J. STAFFORD, Stockton, Ill.

I. C. SMITH, Stockton, Ill.

N. A. KAA, Stockton, Ill.

F. K. KOLB, Apple River, Ill.

A. C. PHILLIPS, Apple River, Ill.

S. BIRKBECK, Gratiot, Wis.

H. T. GODFREY, Galena, Ill.

H. F. GUNN, Galena, Ill.

A. WEIRICH, Galena, Ill.

C. L. HOFFMAN, Galena, Ill.

A. GRASSAU, Galena, Ill.

W. A. SMITH, Galena, Ill.

M. H. CLEARY, Galena, Ill.

D. G. SMITH, Secy., Elizabeth, Ill.

The above is an exact copy of resolution and signers on file in the Secretary's office.

RESOLUTIONS OF RESPECT.

WHEREAS, The Effingham County Medical Society has recently been called upon to chronicle the loss of its most worthy president, Dr. Sumner Clark; and,

WHEREAS, Death has again invaded our much-loved Society, removing from the fraternal circle the familiar figure of our friend and co-worker, Dr. H. G. Van Sandt; therefore, be it

Resolved, That we once more desire to express our sense of loss and bereavement at the sudden demise of one so universally admired for his sterling qualities as a citizen; for his rank as an able and honored physician; for his enviable record as a soldier and patriot, and for the traditions which have distinguished the name of Van Sandt as champions of the downtrodden and oppressed. We would further voice our appreciation of the deceased as a gentleman who we delighted to honor and as a brother in the profession who was singularly gifted with a virility of character and a vivacity of intellect and a pleasing optimism which were inspiring and wholesome. And be it further

Resolved, That we extend to the family of our departed brother all the condolence and sympathy of which the human heart is capable. And be it further

Resolved, That we preserve these resolutions in the archives of the Society as a memorial of our regard for him who hath passed into eternal silence.

J. N. MATTHEWS, M.D.

C. F. BURKHARDT, M.D.

J. B. WALKER, M.D.

Committee.

CHESS TOURNAMENT FOR PHYSICIANS.

LORAIN, OHIO, Oct. 4, 1906.

To the Editor Illinois Medical Journal:

Numbered among your readers are scores of chess players. Therefore, we ask you to give space to the enclosed notice in your next issue. Trusting to be favored and thanking you in advance, I am very truly,

F. B. VAN NÜYS, M.D.

TO CHESS PLAYERS.

The Tri-State Chess Association, an association numbering over four hundred players, the majority of whom reside in the Central States, is arranging a correspondence match at chess of the Doctors versus the Laity. It is desired to have physicians from every section of the United States engage in the match. Therefore, every chess-loving physician is

hereby invited to become a consultant in the case. The match will begin early in November. All who will play are urged to send name and address to the president of the association, stating how many games they will take on. Address Dr. Van Nüys, President, Lorain, Ohio.

COUNTY AND DISTRICT SOCIETIES

CARROLL COUNTY.

The Carroll County Medical Society met in Woodman Hall, Savanna, September 25. There were present: Drs. Burton, Colehour, Clay, Freas, Gray, Hunter, Johnson, Lyness, Maloney, McGrath, Mershon, McPherson, Metcalf, Porter, Powers, Rice, Schreiter, and Dr. Harold N. Moyer, of Chicago. Dr. Moyer gave an informal but very interesting address on Protection for Physicians. He advised keeping records and dates of professional service, whether charity business or not. A legal set of books or a daily journal can then be used as evidence in courts of law. He said that a physician is not obliged to take a case, but a contract begins if he does take it. A man must have only the learning and skill that is common among physicians of the community in which he lives; but he must pursue his case with diligence and such judgment as is required in ordinary walks of life; then he is not guilty no matter what results—a leg may be crooked as a ram's horn; a bladder may be infected; or blood poison follow, but it is not a case of malpractice.

The Savanna doctors entertained their guests at dinner. The meeting was the most interesting that we have had. H. S. METCALFE, *Secretary*.

CLAY COUNTY.

The Clay County Medical Society met at Louisville, Tuesday, Sept. 11, 1906, at 1 p. m. The following members were present: Drs. Fairchild, Bowman, Gibson, Boyles, Steely, A. J. Shore, J. P. Shore and Duncan.

Dr. N. W. Bowman read a paper on

TETANUS.

In reporting this single case of tetanus to you, I shall not attempt to go into a description of this disease, but will give you a rather incomplete report of my experience with a case.

McK., male, white, aged six years, a healthy, well-developed child, was brought to my office on the morning of May 17. His father came to my office door and finding me in, went to the buggy and tried to get the child out. His failure to do so led me to the door to discover the cause. I found the following conditions: The boy was sitting in the buggy with his head turned to the left, his face shielded by his left arm, his right hand was in a sling, his lips were tightly compressed. I asked him to put out his tongue. This he tried to do and the tip of his tongue was seized between his teeth and would have been badly bitten but for quick action on my part. His right arm was stiff and the prick of a hypodermic needle brought on a terrific convulsion. Upon attempting to remove him from the buggy, he became rigid and it was necessary to turn him endways to remove him. When he was laid on a chair in my office, opisthotonos developed and continued until he was under heavy chloroform anesthesia.

Previous History.—Thirteen days previous the patient, while playing with a rusty speed-jack, had his right thumb caught in the cogs and received a lacerated wound of the thumb, extending on both the dorsal and the palmar surface from the tip to the middle of the third phalanges. On the evening of the ninth day following the injury, the patient complained of a sticking sensation in his throat; this he attributed to a piece of oyster shell that he had probably gotten in his throat while eating some oyster soup for supper. On the tenth day he complained of both sides of his throat feeling sore. On the next day, he complained of soreness on both sides of his throat and of not being able to open his mouth easily. During the afternoon and evening he complained of backache. That night he could

not sleep for backache. The next morning he complained bitterly on the way to town of the roughness of the road. The thumb, upon examination, while badly disfigured, had healed over. Under anesthesia, I incised both wounds, freely carrying my incision from the third joint down to the tip. The nail had been misplaced by the injury. I removed it and cauterized both wounds freely with pure carbolic acid and applied a dressing. Before removing him from the buggy I had given him morphia and atropia. After finishing the dressing about 1 p. m. I had him removed to the house of a relative in town about 1:30 and gave orders that he should have more chloroform in case convulsions again developed. While being moved he was conscious and talked with his father about a new rifle. The jaws were firmly set. At this time the head was held straight.

At 3:30 p. m. he had a convulsion of such violence that it threw him from the cot on which he was lying to the floor. This was followed in thirty minutes by another as hard as the first. When I got to him he was on the floor on his knees between two people and said that he could not straighten out. The muscles relaxed under chloroform and I had him placed on a mattress on the floor. The pulse at this time was 130, temperature normal. I had given him at 1:30 tr. gelsemium gr. 2. This I repeated every three hours up to midnight that night without any effect. At 1 a. m. Friday I gave him 10 c.c. of Parke, Davis and Co's. anti-tetanic serum. The convulsions came on every four hours, Thursday afternoon and night.

Friday morning: Patient in convulsions, when not under chloroform. Following a dose of 10 grains of chloral the patient would relax for three hours to rouse in a terrific convulsion without any warning whatever. The serum was repeated Friday noon. Pulse 125, temperature 101 F. The patient had twelve convulsions on Friday. He lay on his back with feet outstretched, toes curled under, arms bent at the elbow and drawn to the side. Any attempt to change the position was followed by a convulsion. Serum injected Friday night at midnight. Patient restless, unless under deep anesthesia, very irritable. Pulse at midnight 130, temperature 103 F. Serum was used at nine o'clock Saturday morning. From this time on serum was used every four hours. Saturday, 2 p. m., temperature 104 F., pulse 140. The patient was as stiff as a board. No attempt was made to give nourishment by mouth; only a few drops of water, as any effort at swallowing was very difficult. Eggs and milk were given by enema every six hours.

The number of convulsions grew less on Sunday. The patient's bowels moved for the first time since Thursday morning, large quantities of gas coming with it. Up to this time he had passed water involuntarily. Temperature on Sunday was 103 F., pulse 125. From Sunday morning there was no chloroform given, as the heart showed signs of weakness. An effort was made to keep patient under chloral. This was not successful. The convulsions came on every five hours. The rectum had become irritable and would retain nothing. Patient had a restless night on Monday night, fussing to be turned over. He lay either on his back with his head drawn back or on his face. The patient was bathed in a profuse perspiration all night. Pulse 135; temperature 101 F.

Tuesday, convulsions at 10 a. m. followed an attempt to drink water. From this until Thursday patient had no violent convulsions. He was able to move arms and head slightly, but the head was turned to the right and could not be straightened. The legs were extended and abducted; toes curled and very sensitive. Wednesday patient had no convulsions; was very fretful; hungry and thirsty. Arms were freely movable; could not move legs while lying on face. Any attempt on part of others to move them brought on rigidity. Serum given every nine hours. On Wednesday bowels moved thoroughly. Passed urine voluntarily. Thursday a. m. patient somewhat improved; still clamorous for food. Thursday afternoon had hard convulsion, following irritation of rectum by injection. The serum was given at nine-hour intervals. As there were no other convulsions, serum was discontinued on Saturday morning. Patient slowly recovered use of limbs. Patient was discharged on the 27th of May. The stiffness of limbs and neck slowly disappeared and patient regained his normal health. Altogether, 28 doses of 280 c.c. of serum were given this patient, all after the thirteenth day of incubation.

In closing, I would say that I am thoroughly convinced that in the anti-tetanic

serum we have a certain cure of dreaded lock jaw, and failure is attained only because we do not give it early and often enough.

Dr. W. F. Fairchild, Flora, read a paper on Arthritis Deformans. General discussion followed both papers in which all present took part.

C. E. DUNCAN, *Secretary*.

COOK COUNTY.

STOCK YARDS BRANCH.

The Union Stock Yards Branch of the Chicago Medical Society held its first meeting, Thursday, Sept. 27, in the Eagle Trust and Savings Bank Bldg., 47th St. and Ashland Ave., with the President, Dr. C. P. Caldwell, in the chair. Dr. Richard J. Tivnen, Chairman of the Organization Committee, reported that he had divided the district into nine sections and has appointed twenty-eight gentlemen to assist him in obtaining new members.

The subject of the evening was Atypical Appendicitis. The paper was given by Dr. P. J. Tischart. Following the paper, there was a general experience meeting on this most important and common inflammatory intestinal affection. It was believed that everyone should know the double A. B. C. tip for typical cases; Acute Attack, Board Belly, Colic Constipation. It was stated that the general practitioner who diagnoses an atypical case is entitled to a fee equal to that of the surgeon who operates. The experience meeting was designed to consider this question.

A. T. HORN, M.D., *Secretary*.

SOUTHWESTERN BRANCH.

The Southwestern Branch of the Chicago Medical Society held its regular meeting Thursday evening, October 2, at 9 p. m., at Grace Café, 540 West 63d Street. The following excellent program was enjoyed by all present: Passive Hyperemia in Inguinal Adenitis, Dr. V. D. Lespinasse; Neuropathic Vesical Retention, Dr. E. N. Layton; with report of case of long standing.

DR. ALBERT E. MOWRY, *Official Reporter*.

NEUROTIC VESICAL RETENTION OF THE URINE,

WITH REPORT OF A LONG-CONTINUED CASE.

E. N. LAYTON, A.M., M.D.

Instructor in Clinical Neurology in Northwestern University Medical School.
CHICAGO.

Retention, or vesical retention of the urine, signifies inability to expel the urine from the bladder, although the amount excreted by the kidneys may be normal or increased. The act of micturition is a complex one and is, in a degree, both voluntary and involuntary. The spinal center is probably located in the lumbar enlargement of the cord and may be stimulated either by a descending cerebral impulse or, reflexly, by the full bladder; or the cerebral action with the conscious desire to urinate may itself be excited by the distended viscus. The sensory elements thus involved are the posterior roots of the lower sacral nerves. The vesico-spinal center undoubtedly has a double function; it stimulates the bladder to contract and expel its contents, and at the same time inhibits the action of the normally contracted sphincter. The brain may stimulate either portion of this center.¹ In further discussing this subject, I shall take the liberty of considering the condition as if it were itself a disease instead of an emergency or complication liable to occur in the course of almost any disease.

ETIOLOGY.

Retention of the urine is caused by mechanical obstruction to the free escape

1. Kirke: Handbook of Physiology.

of the urine through the urethra or by interference with a part or with all of the nervous mechanism controlling the act. Mechanical obstruction may be due to calculus, tumor of the bladder, urethra or surrounding structures, urethral stricture, extreme phimosis, imperforate urethra, or traumatism. The discussion of these conditions belongs in the realm of surgery and will not enter into the present consideration. Retention due to nervous disorders is caused by sphincteric spasm from accidental or habitual over-distention (as in clerks, teachers, nymphomaniacs or masturbators²); by acute cystitis; or by sudden chilling.³ It may also be caused, not so much by over-action of the sphincter as by atony of the muscular walls of the bladder due, most often, to repeated excessive distention, causing thinning and atrophy of the bladder wall; or to a long-continued chronic cystitis. It may be purely neurotic, either post-operative, post-traumatic or idiopathic. This accident of hysteria will be found associated and caused by a fixed idea or overwhelming mental impression.

PATHOLOGY.

The pathology is that of the bladder in a state of distention, plus that of the other structures suffering from this condition. The primary changes in the bladder are, first, atrophic and degenerative; and, second, inflammatory. In the first stage, the epithelium is flattened and gradually all the coats of the bladder-wall become thinned and later atrophic, from the more or less constant stretching to which these tissues are subjected. Probably the muscular layer suffers the most, owing to its structure, which is loose, somewhat delicate, with fibers widely separated and not powerful even in health. It is questionable whether decomposition of the retained urine and the inflammation which ensues could arise alone from the retention and consequent distention of the organ. Catheterization is necessarily resorted to after twenty-four hours of retention and before inflammatory reaction from pressure alone could become manifest. The lesions of cystitis, varying from a simple acute inflammation to that of a virulent suppurative condition, are almost invariably present and are believed to be due, in almost every case, to the necessarily oft-repeated use of the catheter; so that it has become almost a law that frequently repeated catheterization means cystitis eventually. Our army of prostatic cases furnish a dreadful testimony to this fact. The lesions in other organs, due to urinary retention, are dilatation of the ureters, hydronephrosis and often pyonephrosis; and the gastrointestinal changes dependent upon the accompanying constipation.

SYMPTOMS.

The clinical manifestations of retained urine are few but distinct. Subjectively the patient complains of pain, fulness and discomfort in the lower abdomen, a feeling of weight and oppression in the stomach, sometimes accompanied by nausea and vomiting; usually the desire to urinate is progressively urgent. Palpitation of the heart is frequent as are headache and a bearing-down backache, the pain radiating to the shoulders and down the thighs. If the kidneys become involved, especially if infected, the symptoms of disease of these organs are added. In women, dysmenorrhea and dyspareunia are, for obvious reasons, often associated. The objective signs are, in brief, absence of voluntary urination; suprapubic fullness, which is painful to pressure, dull on percussion, does not change with change of posture and which completely disappears when the urine is drawn; a large amount of urine (30 to 50 ounces) obtained by catheter daily, which operation entirely relieves the symptoms; and finally, absence of any evidence of kidney disease or other lesion causing a true suppression of the urine.

DIAGNOSIS.

The diagnosis depends upon the absolute findings just enumerated, together with the exclusion of all manifestations of suppression. Given a case in which no urine is voided but in which nearly or quite the normal quantity for twenty-four hours is obtainable by catheter and which, on examination, shows no evidence of

2. Lydston: Text-book of Genitourinary Diseases.

3. Purdy: Practical Urinalysis.

renal insufficiency, it may properly be regarded as one of purely vesical retention. The differentiation of the cause of the retention is more difficult. It is the object of this paper to consider only that due to nervous insufficiency of the urinary apparatus, omitting a consideration of the differentiation of mechanical retention caused by all of those means outlined above. When referable to the nervous control of the act or micturition, retention of the urine is due to sphincteric spasm, to vesical atony, to a true neurosis or to a combination of any of these conditions. The same conditions of the nervous apparatus cause both the spasm of the sphincter vesicæ and the atony of the bladder wall and they are usually associated; these have been discussed under the head of etiology, viz., habitual or accidental over-distention of the bladder; cystitis, acute or chronic; obstetric accidents or injuries; or an organic lesion of the nervous system, such as a true paralysis. Partial or complete retention for a variable time is of more or less frequent occurrence in meningitis, in the first stage of anterior poliomyelitis, early in some cases of cerebral or cord hemorrhage, in myelitis, sometimes in tabes, and has been encountered in lateral sclerosis and in multiple sclerosis.¹⁰ Of course, in these organic cases, the retention of the urine is only a minor feature of the case and its cause is usually readily traceable to the general condition. Hysterical retention occurs typically after some profound mental impression, such as an emotional storm, an accident, injury or operation. In diagnosing this condition as such, it is essential first that all other possible causes for the condition be eliminated. With a history of some great emotional shock, such as fright, joy, grief; a slight street-car or railway accident; or any surgical procedure, followed immediately by complete retention of the urine; together with finding the usual stigmata of the grand neurosis, and in the absence of the other possible causes mentioned above, the diagnosis of neurotic retention is justified. It is essential to elicit both the subjective and objective evidence of the neurotic condition and to establish the existence of the fixed idea, which latter is practically always present but often really unknown to the patient.

PROGNOSIS.

The prognosis in neurotic retention is almost invariably good with proper handling of the case, although sometimes the course is so prolonged as completely to disgust both patient and attendant.

TREATMENT.

The therapeutic measures employed are of much less importance than the manner of their exhibition. The condition is due to a fixed idea of such proportions that its overthrow and removal can only be accomplished by the substitution of another just as positive and overwhelming. Of the multitude of drugs recommended, probably the alkaline diuretics internally, with a strong, burning liniment and hot applications locally are the most efficient. It is best to direct the patient to take small, definite doses of the internal remedy, preferably by carefully counted drops, much diluted, and at very exact intervals; this medication, coupled with an abundance of assurance and confidence on the part of the attending physician very frequently suffices, for in this particular neurotic manifestation, as in fact in almost any other, every statement must be absolute, unqualified and convincing; on this depends the result. When the patient has not seemed sufficiently impressed by other means, local applications of faradism, galvanism or of the static spark or spray may give very gratifying results. In tractable cases, simply leaving the patient on the bed-pan with the assurance that it will be removed only after he has urinated, has often been successful. Powerful suggestion is, therefore, the key to the situation, and will be found successful in one way or another. Hypnosis may be tried as a final resort and in some cases it has given splendid results, while failing completely in others.

In looking for cases of this sort, I have found the literature of the past few years very meagre. Valentine and Townsend,⁴ in discussing the treatment of re-

4. Valentine and Townsend: Med. News, vol. 84, June 18, 1904, p. 1168.

10. Church and Peterson: Nervous and Mental Diseases.

tertion, mention this condition as possibly occurring from a nervous disorder and do not discuss it.

Gordon⁵ describes a case of hysterical anuria followed in a few days by vesical retention, both conditions being cured by liniments and powerful suggestion; each condition lasted two to three days. He comments upon the comparative rarity of the condition, of which he saw three cases in three years spent at La Salpetriere. He quotes a report of one case cited by Guisy⁶ in an observation covering five years. Gordon discusses at some length the theory of the causation of the condition and believes in the amoebism theory of Rückhard.

Aldrich⁷ cites numerous cases of patients who were unable to urinate under certain conditions; e. g., that of a boy who could not urinate in a dark room, but who had no trouble if in the dark out of doors; of a girl, on the other hand, who could not urinate except in a darkened room; and several other cases of neuroses affecting both urination and defecation. He used suggestion chiefly in treating these cases. Diller⁸ mentions difficult or impossible urination in a case of major hysteria, which recurred frequently for short periods. Pearse⁹ discusses the operative treatment of retention in the male when due to spasm, "contracture of the bladder-neck," urethral stricture and prostatic hypertrophy. Paralysis is the only nervous condition mentioned as having any bearing on urinary retention. Lespinasse¹¹ considers the treatment of acute retention from the surgical standpoint and presents some excellent details of treatment.

The following case is, perhaps, of sufficient interest to warrant a detailed report, chiefly because of its long duration and the absence of cystitis after more than one hundred consecutive catheterizations.

Mrs. W. J. N., a large robust blonde of 28 years; about five feet seven inches tall and weighing 175 pounds; married ten years; has two children, eight and three years old; had two abortions, accidental (?), between these two children and one since the birth of the younger; the first child is said to have weighed but three pounds at birth, the younger twelve pounds; both labors were normal, the second being very long and hard; patient has no knowledge of any obstetrical laceration.

Status præsens. Large, fleshy woman, rather indolent and plethoric in general appearance; tongue is clean and protruded in a straight line, without tremor. Temperature 98.6 F., pulse 70, respiration 14. Bowels are somewhat constipated; patient complains of much "belching and bloating"; appetite is variable. Heart and lungs are normal. Subjectively, there are constant headache and backache of a dull, depressing character; pain in the lower abdomen, which increases in severity as the bladder fills, at which times patient is unable to extend the right leg; a feeling of fullness and oppression about the heart with an occasional "sinking-spell," *globus hystericus*.

Objectively, the skin is generally sensitive, with excessively tender points at the knees and in the mid-dorsal and ovarian regions. The backs of all of the fingers of the right hand are anesthetic; there are many hot and cold spots on the extremities; dermatographia is marked; taste and smell are normal. The pharyngeal and plantar reflexes are almost wanting; all other reflexes are normal. The rather prominent eyes are well covered by the drooping lids; the visual fields are bilaterally contracted and the color formulæ are reversed in both fields. Sleep is extremely variable; memory normal; patient is emotional, and fits of laughing, crying or of intense anger are not infrequent. There is a perineal laceration of the first degree; the cervix is also deeply torn transversely. A large sound enters the bladder freely and is not opposed by obstruction or sphincteric spasm; the kidneys are not palpable. The urine is acid, has a specific gravity of 1.022, contains no casts, blood, pus or albumen: there are some epithelial cells.

5. Gordon: Med. Rec., vol. 58, 1900, p. 289.

6. Gulsy: Progres Médicale, 1898, viii, 3 s., p. 84.

7. Aldrich: Am. Med., vol. v., No. 13, March 28, 1903, p. 489.

8. Diller: Med. Rec., vol. lxxvii, No. 19, May 13, 1905, p. 736.

9. Pearse: K. C. Med. Index-Lancet, vol. xxvi, No. 304, April 1905, p. 134.

11. Lespinasse: Ill. Med. Jour., Dec. 1905, p. 524.

Family history is entirely negative; the patient's father died when she was very young; the mother is living at 45 years and is in excellent health; there is no trace of nervous, mental, alcoholic or syphilitic taint.

Past History. Patient has had tonsillitis all her life and has been very prone to colds; there have been no serious illnesses. When she was sixteen years old, she had an attack of retention of the urine lasting a week. Half a dozen doctors were called to attend her in as many days and the seventh prescribed a very black and bitter medicine of which the patient was to take a few drops every hour. The attack was cured in a very short time, due to the marvellous effect of the black, bitter medicine. The tonsils and the adenoids were removed last spring, since which time she has had no further throat trouble.

Present illness. On April 1, last, patient had a curettement performed in hospital for chronic endometritis. The following two days were uneventful, the urine and feces being voided naturally. On the third day after the operation, patient stated that no urine had been passed and the nurse in charge was not aware that any had escaped. The next day clear, sterile water was substituted for the half per cent. lysol solution previously used for the daily vaginal douches. Following this irrigation, the fluid in the douche-pan was found to be much in excess of that formerly in the irrigator and to have acquired a strong urinous odor and color. This was called to the attention of the patient after she had insisted that she had not urinated. During the remainder of the patient's two weeks' stay in the hospital, sterile water douches only were used, but on no subsequent occasion was the urine passed voluntarily. The patient was catheterized twice daily and the amount thus obtained was normal for the twenty-four hours—30 to 50 ounces.

Urine was henceforth drawn by catheter once and sometimes twice a day until May 1, just one month after the operation. During this time, all the various measures above mentioned in the treatment of such cases were tried, except the use of electricity. Even hypnosis was resorted to on several occasions and although otherwise the subject was under perfect control, there was no more effect obtained upon the urinary apparatus than had been gained by the medicines, liniments, etc., previously employed. During all this time, the normal amount of urine was obtained by catheter and repeated careful examinations showed no trace of vesical inflammation or infection.

On May 1, in consultation with Dr. Hecht, the urinary meatus was forcibly dilated to the extent of two centimeters with the tips of an ordinary uterine dressing-foreeps. The patient was assured that this manipulation, although painful and disagreeable, would be followed at once by voluntary urination. The effort was entirely successful and the patient passed a large quantity of urine. She was told that her trouble was now at an end and she need have no fear of a recurrence. We were too sanguine, however, as the same procedure had to be repeated on each of the three succeeding days, with the same free and immediate result. Thereafter, there was no response to this treatment and the catheterizations had to be resumed.

One week later I took the patient to Dr. Chureh, who applied the static breeze over pubic and vulvar regions; there was no response. Three days later, I passed an ordinary female sound into the bladder and applied the same static current through this medium. After three or four minutes the patient expressed a desire to urinate but was made to endure the current for two minutes longer until she was apparently in great distress. On retiring to the toilet room she passed a large amount of urine without any effort. For the next three weeks this method was successfully employed on alternate days, the patient claiming that no urine was passed at any other time. Of course, the catheter was used on the intervening days.

On June 1, the younger child of the patient had an attack of diphtheria, which prevented the use of the static treatment for three weeks. This great distraction of attention from herself, however, was not sufficiently suggestive to allow of voluntary urination.

On June 21, the use of static breeze was resumed, but on the first day had no effect and the catheter had to be used. Thereafter, however, urination was possible

after two to five minutes exposure to the current through the steel sound in the bladder. One week later, June 29, the sound was omitted, the current being directed against the pubic, vulvar and hypogastric regions: patient urinated voluntarily after ten minutes' treatment. After this, the sound was not again used and voluntary urination was free and painless after a few seconds exposure to the current.

On July 7, fourteen weeks from the date of the operation and onset of the retention, the patient called me up on the telephone and said the urine had escaped involuntarily during the night and had been passed voluntarily every two or three hours during the present day. Some difficulty was experienced the following day and it was necessary to use the catheter. Since then the act of micturition has been entirely within the control of the patient; has not been too frequent and is entirely free and painless.

The case has been recited at length because of its undoubted neurotic character and etiology; because of its very long duration (over three months); on account of the failure of hypnosis in a case of that class which is supposed to be especially amenable to such treatment; and, finally, the unusually long, regular use of the catheter without the production of any symptoms of cystitis.

1125 West 51st Street.

DEWITT COUNTY.

The Dewitt County Medical Society convened in the County Court room Wednesday, Oct. 9, 1906, at 1 p. m. In the absence of President J. M. Wilcox, the Vice President, Dr. John H. Tyler, occupied the chair. The minutes of the last meeting were read and approved. Dr. E. Mammen, of Bloomington, entertained and instructed the Society with an interesting address on The Value of Early Diagnosis, which was discussed by Drs. McClelland, Dowdall and E. E. Hagler, of Springfield. Then followed a Symposium on Labor. Dr. W. E. Chalstran gave his views on The Use of Anesthetics in Labor. Dr. G. G. Dowell discoursed on When to Use the Forceps in Labor, and Dr. John H. Zeigler, of Farmers City, pointed out clearly The Most Serious Complications of Labor. These excellent papers were freely commented upon, Dr. W. E. McLellen opening the discussion, and a full and free discussion was participated in by nearly all present. Chloroform was favored as the best anesthetic. The indications for forceps were clearly shown. Prolapse of the fundus, postmortem hemorrhage and eclampsia received attention as the most serious complications. Bleeding and hypodermic injections of morphia proved effective remedial agents for eclampsia in the hands of many.

The Secretary read the applications of C. S. Sauderson, Maynesville, John H. Zeigler, Farmers City, and H. E. Price, of Weldon. These applications were referred to the Board of Censors, who reported favorably and, on motion, they were elected members of the Society. Dr. H. E. Price, a graduate of the Eclectic School of Medicine, of Cincinnati, declared he practiced no exclusive system of medicine and was unanimously received as a member.

H. E. CAMPBELL, *Secretary*.

FULTON COUNTY.

The ninth annual meeting of the Fulton County Medical Society was held in the parlors of the Churchill House, Canton, Oct. 2, 1906. In the absence of President Plummer and Vice-President Chapin, Dr. Sutton was called to the chair. Dr. C. D. Snively was chosen secretary, *pro tem*. The following officers were elected: President, Dr. L. R. Chapin, Canton; First Vice-President, Dr. G. R. Blackstone, Table Grove; Second Vice-President, Dr. A. C. Cluts, Ellisville; Secretary-Treasurer, Dr. D. S. Ray, Cuba; Necrologist, Dr. P. H. Stoops, Ipava; Membership Committee, Dr. G. S. Betts, Banner; Censor, Dr. E. W. Regan, Canton; Delegate to the State Meeting, Dr. T. C. Hayes, Canton. On motion, Dr. Hayes was empowered to appoint his alternate. On motion, the protective feature of the state society was

adopted. Article IV of by-laws was amended to read as follows: "The yearly dues shall be \$3.50, which shall include membership in the Illinois State Medical Society, one year's subscription to the ILLINOIS MEDICAL JOURNAL and one year's mal-practice protection."

Adjourned for dinner. Twenty-three physicians and ladies enjoyed the very sumptuous dinner especially prepared for them by Landlord Boyle.

The afternoon session was called to order at 1:30 p. m., President Chapin presiding, Secretary-Treasurer Ray present. Dr. Shallenberger presented a paper on Organization that was well received and profitably discussed by all present. Dr. Regan presented a very interesting paper on Eye Strain. The president appointed the following program committee: Scholes, Stoops and Snively. Drs. Coleman and Shallenberger moved that this society commend the efforts of the State Board of Health in securing pure food products and to call their attention to the inaccuracies in the list of physicians of Fulton County in the directory published by them. Carried. The program committee reported the following which was adopted for the December meeting: Ulcers of the Lower Extremities, Dr. D. D. Waggoner, Lewistown; Pneumonia, Dr. E. S. Parker, Vermont; Hemorrhoids, Dr. V. C. Morton, Ipava; Smallpox, Dr. Robt. Ewan, Smithfield.

The membership committee reported favorably on the applications of Drs. Lloyd Boynton, of Vermont and H. C. Putnam, of Canton. On motion, bill of the Cuba Journal for \$5.00 was allowed and ordered paid. The secretary-treasurer's report was read and accepted. The report showed a balance of \$59.65 on hand. Drs. Shallenberger and Sutton moved that the secretary be instructed to pay for the annual dinner and entertainment out of the society's funds. Carried.

The following members were present: L. R. Chapin, Canton; J. E. Coleman, Canton; C. D. Snively, Summum; P. H. Stoops, Ipava; P. S. Scholes, Canton; Robt. Ewan, Smithfield; J. E. Sutton, Canton; Martha Richardson, Canton; Veda C. Murphy, Cuba; A. C. Cluts, Ellisville; E. W. Regan, Canton; W. E. Shallenberger, Canton; P. B. Goodwin, Summum; E. S. Parker, Vermont; H. Putnam, Canton; T. C. Hayes, Canton; G. S. Betts, Banner; D. S. Ray, Cuba.

The following collections were made:

T. C. Hayes.....	\$3.50	E. S. Parker.....	\$3.50
Martha Richardson	3.50	J. E. Coleman.....	
E. W. Regan.....	4.00	P. H. Stoops.....	4.00
A. C. Cluts.....	.50	V. C. Motton.....	4.00
E. W. Shallenberger.....	4.00	P. S. Scholes.....	4.00
J. E. Sutton.....	4.00	C. D. Snively.....	4.00
L. R. Chapin.....	1.50	W. R. Blackburn.....	3.50
P. B. Goodwin.....	3.50	D. S. Ray.....	4.00
Robt. Ewan.....	3.50		
		Total	\$59.00

DISBURSEMENTS.

Cuba Journal	\$ 5.00
22 dinners	11.00
20 opera tickets.....	10.00
Total	\$26.00

Twenty members and ladies attended the opera.

On motion the society adjourned.

D. S. RAY, *Secretary-Treas.*

JACKSON COUNTY.

The Jackson County Medical Society held an interesting meeting in the parlors of the Logan House, Murphysboro, Thursday, October 18. The following program was rendered: Extra Uterine Pregnancy With a Report of a Case, Dr. H. G. Hortsman, Vergennes; Examination of the Blood as an Aid to Diagnosis, Dr. H. H. Roth, Murphysboro.

After these papers, a memorial meeting was held to the memory of our late Secretary, Dr. W. C. Hill, of Murphysboro. After a short memorial address by each member present, the following resolutions were adopted:

There comes in the life of every society a time at which it may wish to show respect to the memory of one of its deceased members; and such a time has now arrived in the life of the Jackson County Medical Society. Death, dreaded by all, is a visitor that each must at some time entertain, and though three score and ten years have been said to be the number allotted to man, some must meet this grim visitor at earlier periods of life; and such was the allotment, by the All Wise Creator, to our late Secretary, Dr. W. C. Hill.

Dr. Hill was allotted one score and five years, one-third of that which was promised to man, but his life work shows that the time given him was not wasted. Thrown upon his own resources early in life, he, undaunted and with courage, so moulded his character, that when he was called to his eternal reward, there was no man but who could say "friend." As a physician, he was learned, as a diagnostician, he was sure, as a therapist, practical, and as a surgeon, careful. As Secretary of this Society, he was enthusiastic, and ever ready to do the work necessary for its good or its advancement.

Reviewing his brief life, this committee can not help but offer, that in his death, his mother has lost a devoted son, the profession of medicine an honored practitioner, this Society an enthusiastic member, and the world a man.

It is recommended that a page of our minutes be set aside and dedicated to his memory, with a copy of this memorial and the date thereon. Further, recommended that a copy of this memorial be sent to the family of the deceased.

J. T. McANALY, M.D.

CHAS. MOLZ, M.D.

M. ATHERTON, M.D.

Committee.

JO DAVIESS COUNTY.

The regular quarterly meeting of the Jo Daviess County Medical Society was held in Galena, Ill., Oct. 4, 1906. The meeting was called to order and the following responded: Weirich, Wright, Kobb, Beuch, Nadig, Keller, Smith, W. A., Godfrey, Czibulka, Gratiot, Tynell, Ginn, Bucknaw, Smith, D. G., Guthrie, with Dr. Boots, of Hanover; Dr. Melhop and Pond, of Dubuque, Iowa, and Hoffman, of Galena, as visitors. The applications of G. H. Gottral, of Hanover; J. C. Renwick, of Warren, and F. K. Kolb, of Apple River, were voted upon and they were elected to membership. Applications were received from C. L. Hoffman, Galena; C. W. Melhop and A. M. Pond, of Dubuque, Iowa.

The first subject was Diphtheria. The essayist not being present, his paper was read by the Secretary. This brought on considerable discussion but it was unanimously agreed that all cases of diphtheria, or suspected diphtheria, should be treated early with antitoxin in doses ranging from 3,000 to 8,000 units, repeated as the case may require, to counteract the toxin, and also that the excretory organs be watched and stimulated if needed, especially the bowels, by the use of the mild chlorid of mercury.

Dr. Czibulka next read a paper on Some Eye Problems the General Practitioner Is Called Upon to Solve. This was discussed by Gratiot, Melhop, Godfrey and Guthrie, who thought that every practitioner should learn the use of the ophthalmoscope to aid him in making more correct diagnoses.

On motion, the Society year was changed to begin January 1, instead of April, to conform with the State Society and American Medical Association.

Dr. Tynell moved the following resolution, which was seconded by Dr. Guthrie:

Resolved, That the members of this Society heartily endorse the plan of reciprocity, whereby Illinois can reciprocate with states having equal requirements and qualifications as regards license issued from diploma the same as examination and that the Secretary be instructed to send a copy of said resolution to the Secretary of the State Board of Health.

The vote stood nineteen for, none against.

On motion, the Society adjourned, to meet in Stockton, in January, 1907.

D. G. SMITH, *Secretary.*

McLEAN COUNTY.

The September meeting of the McLean County Medical Society was held in the Council Chamber of the City Hall, Bloomington, at 8 p. m., September 6. President Bath occupied the chair. The minutes of the July and August meetings were read and approved. Dr. F. C. Vandervort in a very interesting manner spoke of London as a Medical Center, while Dr. J. W. Fulwiler gave a Historical Sketch and Recent Observations in London Hospitals. Dr. E. P. Sloan read a paper on Quinin in Hysterical Labor Pains. He spoke of the difficulty of distinguishing between hysterical, false and true labor pains, and the injury which may come from giving quinin in hysterical pains. After some questions and discussion the meeting adjourned.

The October meeting of the McLean County Medical Society was held in the Council Chamber of the City Hall, Bloomington, at 7:30 p. m., October 4. The meeting was called to order by President Bath. The minutes of the last regular meeting were read and approved. The following resolutions upon the death of Dr. G. D. Elder, drawn by Drs. C. M. Noble, M. D. Hull and A. L. Fox, were presented, read and adopted:

WHEREAS, It has pleased Almighty God to remove from our midst Dr. G. D. Elder, who has long been an able and honorable member of our profession; be it

Resolved, That the McLean County Medical Society deeply deplore his loss and extend their sympathy to the bereaved wife and daughter; and be it further

Resolved, That a copy of these resolutions be sent to them and be spread on the minutes of the society.

Dr. J. B. Taylor spoke of the well, near the water works, into which Sugar Creek has been turned, as a very great menace to the health of the city through contamination of the water supply, and made a motion that the president of our society, together with two other members, to be appointed by the chair, use their influence with the health committee to have said well filled up. Motion seconded and carried. Dr. J. W. Smith referred to the advisability of having the books at the public library disinfected to prevent spread of contagious diseases. Dr. Hawks spoke of the inefficiency of formaldehyd. Dr. Taylor suggested the use of a closed chamber for disinfecting a few at a time, or, at least, those suspected of harboring disease germs. Dr. W. E. Guthrie, in an informal but entertaining manner, told us of what he had seen recently at the Mayo Brothers' Hospital, giving somewhat in detail the methods employed and the systematic way in which their work is carried on. The following members were present: Drs. Bath, Yolton, R. C. and J. L. Fox, A. L. and R. D. Hart, Guthrie, Taylor, Hull, C. M. Noble, Hawks, Smith, J. W. and Lee Welch, Howell and Rhodes.

Meeting adjourned.

T. W. BATH, *President*.

C. M. RHODES, *Secretary*.

MACOUPIN COUNTY..

The semi-annual meeting of the Macoupin County Medical Society was held in Carlinville, October 16, President J. N. English, of Gillespie, in the chair. The action taken by the Pike County Medical Association, protesting against reduction of examination fees for examining applicants for life insurance by the old line companies was indorsed. The resignation of E. A. Bleuler as secretary of the County Medical Society was tendered and accepted. The Board of Censors, consisting of Drs. Gross, Fischer and Pattison, appointed Dr. J. Palmer Matthews to the office of secretary. The Board of Censors appointed three members to furnish the program for the next meeting to be held on the fourth Thursday in January, 1907. The proposed amendment to Act XL, providing for quarterly meetings instead of semi-annual meetings was freely discussed and then unanimously adopted.

Dr. J. A. Hartman, of St. Louis, presented a number of very interesting post-mortem specimens, with a very interesting essay on Rupture of the Stomach Due to Gastromalacia. Dr. Pattison read an interesting essay on Prevention and Treatment of Abortion and Dr. H. J. Davis read a paper on Typhoid Fever which

showed that he had read the authorities on that infectious disease very thoroughly. Dr. W. M. Gross read an interesting paper on Electricity and Its Manifestations in the Body.

MAN AND THE HOUSE IN WHICH HE LIVES.

W. M. GROSS, M.D.

GILLESPIE.

The houses we live in, being the last designed by creative energy, contain everything found in the entire universe. When we get down to the basic principles of our existence, we are forced to the conclusion that ether (or Spirit, if you will have it that way), is a universal substance from which all the other forms of substance spring. As electricity plays a part in the mineral, vegetable and animal kingdoms by the sexation of the atoms of which they are composed, it is evident that it is the force that changes one form of substance to another. Metals are good conductors of heat and are positive in electricity; metalloids are poor conductors of heat and are negative in electricity. These two must come together before a third substance is produced in chemistry (sexation). It is known, in the vegetable kingdom, that the pollen must be conveyed from one plant to another before fruit is produced (sexation again). In the animal kingdom, both male and female are necessary before the species is reproduced. If this law holds good in the mineral, vegetable and animal kingdoms, it evidently holds good generally. Then sexation, like gravitation, is a universal law, the universal ether comes in with the air we breathe and assists in furnishing cells to build up and repair the houses in which we live, the more highly finished and vitalized cells are stored away for generative and regenerative purposes. Someone has said that ether is the father and hydrogen the mother of all things. Life is stored away in the seed and springs from the seed. The real germ within the grain is pure substance, therefore, invisible, we can only see its matrix. It is generally conceded by scientists that the cortical or external area of the human brain is the seat of intellect, but the brain alone is not the mind, only its organ; a piano is not the music, but an instrument out of which it may be evolved. The brain cells are very minute in character, ovoidal in form and connected together by muscular tissue under the control of the will. It is probable that impressions are photographed upon these brain cells in a similar manner to the indentions upon the waxed cylinder of a phonograph, and that they can be rubbed off again when occasion requires. It is also probable that no two of these brain cells are alike in every particular; then it is reasonable to conclude that the impression made upon one cell would differ from that made upon another, and for this reason the human judgment is closely related to the structure and tension of the brain cells. The diaphragm of a telephone receiver is made of iron, and if of good material, properly polished, it serves the purpose well for which it was designed. This will apply to the brain cells, that is, if they are of good material by nature and properly polished by education, they become good transmitters of thought. The earth is the negative and the atmosphere the positive pole of the plant. The blood is the negative and the atmosphere the positive pole of man. Along this line, we know that a man may stop eating for a while and still remain in his house, but as soon as he stops breathing, he is compelled to move out. The cerebrospinal and sympathetic nervous systems are composed of two structural elements—cells and fibers which differ in function in that the former generate and conduct nerve force, while the latter merely conduct it. In wireless telegraphy the conducting medium is no less materialistic than the wires of the ordinary telegraph or the nerves of the human body. When in a normal condition, man occupies every room in his house from basement to garret, in fact, every room is so full that we are permitted to say that there is an ethereal as well as a material man. Along this line, we can see that a thought may be registered partly upon the material and partly upon the ethereal cell (intuition). If the circulation is slowed up in the brain cell, it becomes as a piece of blank paper, ready for any impression (hypnotism), but if the material cell could be held completely in abeyance, the ethereal alone acting (clairvoyance), thought would be absolutely correct.

Dr. J. H. Mitchell read instructive notes on a case of hip joint disease, its symptoms and treatment.

The discussion of the several essays was participated in by all present and many interesting and instructive points were brought out.

This meeting was one of the most interesting, instructive and best attended meetings in the history of the Society. The members present were as follows: J. N. English, President; E. A. Bleuler, Secretary; J. H. Mitchell, Girard; R. S. Cowan, Girard; G. W. Morgan, Girard; G. E. Hill, Girard; C. E. Allen, Virden; E. K. Lockwood, Virden; E. R. Motley, Virden; Wm. M. Gross, Gillespie; C. D. King, Gillespie; H. A. Pattison, Benld; A. G. Kinkead, Greenfield; H. W. Gobble, Greenfield; C. R. Bell, Thayer; W. A. Trout, Atwater; F. H. Charles, Shipman; L. H. Corr, Carlinville; J. Pitt Matthews, Carlinville; John Palmer Matthews, Carlinville; J. C. J. Fischer, Carlinville; J. S. Collins, Carlinville; J. P. Denby, Carlinville; J. H. Davis, Carlinville; F. M. Wood, Carlinville.

MONTGOMERY COUNTY.

The Montgomery County Medical Society met in regular semi-annual session, Tuesday, Oct. 2, 1906. The program consisted of the business meeting and election of officers. A paper was read on Gastric Ulcer by Dr. W. H. Rush, of St. Louis, Mo. and a paper on Diphtheria by Dr. L. G. Allen, of Litchfield.

The following resolutions were presented and unanimously adopted:

WHEREAS, The legislature of the State of Illinois has found it necessary, for the protection of society, to pass laws restricting the indiscriminate sale and distribution of medicines by incompetent and unscrupulous itinerant vendors of the same; and

WHEREAS, We regard such practice of indiscriminate sale and distribution of medicines dangerous to the welfare of the public; and

WHEREAS, In order to evade the liability under said laws, we find that many druggists lend themselves to such fraudulent and incompetent purveyors of medicines by becoming sales agents for them; therefore, be it

Resolved, That we, the members of the Montgomery County Medical Society, condemn the practice of druggists who serve as tools and agents of such wandering frauds; and be it further

Resolved, That we regard druggists who stoop to such practice, as conspirators against said laws and unworthy of the confidence of the medical profession, and we deem it wise in the future to withhold our patronage from all druggists who lend themselves to this nefarious traffic; and be it further

Resolved, That a copy of these resolutions be sent to every physician and druggist in the county, the secretary of the state board of health and the editor of the ILLINOIS MEDICAL JOURNAL, with recommendation that other societies take similar action.

The following officers were elected for the years 1906-7: President, P. M. Kelly, Litchfield; Vice-President, W. W. Douglass, Hillsboro; Secretary and Treasurer, H. F. Bennett, Litchfield; Board of Censors, M. L. Moyer, Hillsboro, Ill., W. A. Allen, Donnellson, Ill., T. J. Whitten, Nokomis, Ill.

MORGAN COUNTY.

The Morgan County Medical Society held its regular monthly meeting Thursday, October 11, at 8 p. m. Dr. Josephine Milligan presided. There were seventeen members present. Dr. Edward Bowe read a paper on Medical Education in Germany. Following is a brief abstract:

The advantages to be gained from medical study abroad by the younger members of the profession are largely dependent upon the individual. If he has had the proper preliminary and medical education at home and has advanced in general practice to such a degree that he is competent to realize and determine his

greatest needs in attaining the highest degree of success in his chosen line, or if he is conscious of the fact that he has deficiencies that impair or curtail his usefulness and if he undertakes a course of study to remedy these, he will be well repaid for his efforts. The recent graduate, with or without a limited hospital experience added, who depends upon study abroad to fit him for a specialty or a limited practice will be disappointed. In undertaking such study a definite plan of procedure should, as far as possible, be outlined. One should study the language of the country he intends visiting. The conversational method is preferable and soon gives a working vocabulary. This acquired, the grammar will be much easier and more interesting.

In selecting a medical center in which to study, much valuable information can be secured from those who have recently studied abroad, also by correspondence with certain medical book dealers who furnish information regarding the work done in their respective cities. For those who intend studying in Germany, the selection of a steamship line is a matter of some importance. The Hamburg-American or Nord Deutscher Lloyd lines are to be preferred, since, for a period of ten days or two weeks you are constantly associated with German Americans and Germans, thus becoming more familiar with the language and, in addition, many valued acquaintances are formed who will impart a wealth of useful information regarding the country you are approaching. For those who select the Hamburg-American line, Hamburg will be the first large city visited. It is the second city of the German Empire and much interesting medical and surgical work can be seen at the Eppendorfer Hospital.

As to the selection of a medical center and an explanation of the medical work that can be done in Germany. Good work can be done in any of the great medical centers, that is, where there is a university and a teaching staff, but one should endeavor to select the place most suited for the class of work he desires and above all to select good teachers. In Germany, post-graduate work is done in two ways, either by private instruction or by attending the large clinics. Private instruction is given either by the assistants of the professors in the universities or by men who have private hospitals. The amount of clinical material seems to be unlimited and is derived by men outside the large charity hospitals, chiefly from the "Casse" organizations that furnish medical and hospital care to certain classes.

The assistants of the professors and the heads of the departments in the large charity hospitals derive their material much in the same way as is done in America. The essayist's personal experience was that the men outside the schools furnished the best private instruction. The method of procedure in private instruction is that a class of four is formed and an instructor engaged for a specified time, usually one month. This instructor furnishes ample clinical material, teaches, in detail, the line you are following, and endeavors by actual demonstration to teach methods and principles desired. To explain more fully, a private course in gynecology will serve as an example. Two courses are given; one gynecological diagnosis, another in operative gynecology on the cadaver, and on the living subject, if you prove competent, as far as the minor operations are concerned.

In the diagnostic course, three hours for three days during each week are utilized. Each student is furnished a history of the case and allowed to make an examination at will; then the case is examined by the instructor and the diagnosis, pathology and treatment are thoroughly discussed. In the operative course on the cadaver, you are taught the technic and principles of all the operations that occur in gynecology and in addition, you are taught the use of local treatment, the introduction of pessaries, curettement, perineorrhaphy, trachelorrhaphy, and other minor operations on the living subject. This is an example of private instruction as carried out in every department of medicine and surgery in Germany. The larger clinics are conducted the same as the American and may be attended by asking the permission of the clinicians, but the better plan is to matriculate in the university.

Berlin, the largest city of the German Empire, affords unusual advantages, both for private and clinical instruction. The opportunities for observation and study in other lines are excellent. The Anglo-American Medical Society, composed of the English-speaking physicians in Berlin, affords pleasurable associations and also imparts detailed information regarding the work that can be done in Berlin. The essayist reviewed the various clinics and hospitals, also the work done in pathology and anatomy. He also spoke of the splendid opportunities for study in obstetrics to be had in Dresden and Leipsic. The private hospitals of Germany are not equal to those of America. The public hospitals are superior in structure, equipment and clinical advantages.

The Germans have beautiful equipment, instruments and appliances, but are not as good operators as the Americans. They make large wounds and operate in bloody fields and lack much of the mechanical genius that characterizes the Americans. Neither are they the equals of the Americans in the different branches of therapy. In pathology, the foundation of rational diagnosis, the Germans are masters. In diagnosis, the corner-stone of medicine and surgery, they excel all others.

Six months' work can be done in Germany for \$1,000.00, allowing for transportation and all incidentals. The advancement in the profession and the many valuable lessons to be learned by travel and association with the people of other countries make much study invaluable.

Dr. Carl E. Black, who has just returned from spending the summer in Germany, spoke briefly on some of the differences between American and English and German surgery. One of the first things he noticed in Germany was the apparent lack of personal preparation by the surgeon himself. He saw many operations performed by eminent surgeons making none of the elaborate preparations made by surgeons in America. There were no operating suits; no operating-room shoes, excepting heavy overshoes; no face covers; few caps and no change of clothing on the part of the surgeon or assistants. They simply took off their coats, rolled up their sleeves, thoroughly prepared their hands and arms and went to work. The same was true in England. The patients, however, were perhaps even more carefully prepared than with us. For abdominal operations they came into the operating room prepared in advance, not by nurses, but by assistant physicians, and banded from breast to knee. No other clothing or covering came into the operating room—no sheets, blankets or gowns.

Another point of difference was the lack of separation of clean and septic cases for operation. The septic were often operated upon at the same time and in the same room at adjoining tables with clean cases. In Von Bergmann's clinic, operations for appendicitis followed immediately after an exhibition of a number of cases of varicose ulcers. The question, of course, arises: "Have they discovered that many of our precautions are unnecessary, or do they simply disregard some of the minor details of technic?" There is comparatively little in German literature of statistical results. The German is more devoted to diagnosis and pathology and has less regard for the statistics of results. Dr. Black believed that statistics as carefully kept as those of some American surgeons would show that the precautions taken by American surgeons lower the death rate.

In the Charité Hospital they have a beautiful amphitheater with all modern conveniences, and the same careful preparation of patients, but frequently the same disregard of the sequence of septic and clean cases. The work of the German surgeon is well done, but not so rapidly, and, on the whole, not so skilfully as that of the American surgeon. The American surgeon is less deliberate in his work—more Yankee ingenuity.

In Prof. Israel's clinic, in Berlin, the observers crowd about the operating table in their ordinary clothes; and are never offered gowns, and Israel, himself, never covers his beautiful whiskers or hair, and except on hot days does not even doff his collar. His work, however, is marvelous to behold. "Israel's incision" in kidney operations lays bare at one stroke almost the entire kidney. His skiagraphs of renal calculi are the best in the world. He makes one of each case before operating, which shows the location, shape and size of the calculus.

In the Charité Hospital, in Berlin, there is a surgical gymnasium containing many mechanical appliances for increasing the motion of stiff muscles, joints, etc. A patient's disability is gauged and recorded from time to time. In accidents involving insurance and the like the disability of the patient is rated here in percentages of normal by the surgeon.

There seems to be a very much smaller proportion of operations for appendicitis in Germany than with us. The patients were in the hospital waiting for the surgeon to decide whether to operate or not, consequently many of them were not operated upon. The Germans are now where Americans were ten years ago in the matter of operation for appendicitis. American surgeons look at the question statistically and decide that the earlier the patients are operated upon the more of them will be saved. The Germans look at each case individually and wait until they discover dangerous symptoms before operating. Dr. Black thinks the American plan causes more operations, but saves more lives.

English surgery may be said to be in the antiseptic stage. Carbolic acid and other antiseptics are still relied upon in a manner which the Americans and Germans have outgrown. The English make fun of our operating suits and many of the elaborate preparations made by American surgeons. English surgery is essentially conservative. Progress is impeded by this extreme conservatism. In King's College Hospital, some years ago, he saw the great Lord Lister operate, surrounded by all his antiseptic appliances, and to-day, the operator in the same hospital stands in an arena surrounded by the busts of Astley Cooper, Spencer Wells, Wm. Cheselden, Matthew Baillie, Percival Pott, Thos. Sydenham, Chas. Bell, Edward Bell, John Hunter, Wm. Harvey, Richard Wiseman, Wm. Fergusson, Lionel Beale and Joseph Lister, whose ghosts seem to hover in the atmosphere of the great hospital. In England, it would, in a degree, be treason to the memory of these great men to depart radically from the precepts laid down by them during their lifetime. Many things that we consider essentials are partly disregarded by the Germans and wholly so by the English. If statistics are to be trusted the results of American surgery are superior to either English or German.

In discussion, Dr. Hairgrove said he was surprised to hear some of the things that had been said regarding lack of care by German surgeons. They must have degenerated since he was in Germany. In Prof. Leopold's Obstetrical Clinic when he was there, each student before coming into the class, changed his linen, donned a gown, and before making a single examination, scrubbed his hands ten minutes by the clock. Dr. Bowe said that the same care is shown to-day in Prof. Leopold's clinic.

PEORIA COUNTY.

The Peoria Medical Society began its fall term in a very enthusiastic manner, Tuesday evening, September 4, by a paper by Dr. Leslie Rutherford, on Hyperchlorhydria. All the officers were present, also Drs. Marcy, Thomas, Hinckle, Green, Probst, Rutherford, Bacon, Roberts, E. L. Davis, Short, Bane, Floyd, Allison, Barbour, Collins, Weber, Miller, Kelley, Dowdall, Lucas, Hanna, Kerr, Kanne and Sidley.

The paper was a very interesting one, showing deep study, and met with discussion by nearly all present. The meeting on September 18 was a clinical meeting and was very largely attended. Dr. C. U. Collins presented specimens removed in a case of multiple fibroids of the uterus and a dermoid cyst of each ovary. The patient had menstruated regularly, normally and without pain and there was nothing to indicate her condition except a hard mass in the lower abdomen.

He also presented a tubercular kidney, which had been removed from a patient, the symptoms dating back ten years. He also presented a report of a case of double uterus and another case in which he had found a mass deep in the pelvis behind the posterior peritoneum, which proved to be the right kidney.

Dr. S. M. Miller reported a case of a girl 9 years old, who had pneumonia last January, which was followed by an empyema of the right pleural cavity.

This perforated spontaneously in June in the third interspace near to the right sternal margin. As the opening gave poor drainage, and did not promise an early closure, on July 27 he resected one inch of the sixth rib in the anterior axillary line. The empyema was of five months' duration, and the lung had been retracted for that length of time. He used Van Hook's air pump as described by Richter in "Surgery, Gynecology and Obstetrics" in the March issue, to create a continuous negative intrathoracic pressure, with the threefold object of causing the expansion of the lung, and its resumption of function at the earliest moment, of securing the most perfect drainage, and of closing the pleural cavity by the approximation of the lung to the chest wall. The apparatus accomplished the result admirably. Where the tube perforated the chest wall he made an air-tight joint necessary to the perfect working of the apparatus by applying a rubber dam to the chest wall by means of zinc oxid ointment. The rubber tube perforated this and was fastened to it by a purse-string suture.

While this apparatus accomplished the object nicely, it is open to the objection of being rather cumbersome, and, too, it chains the patient to his bed, or gives him only a limited range of freedom. It was, therefore, replaced by the apparatus described by Bryant in the August number of "Surgery, Gynecology and Obstetrics." It consists of a rubber tube used for drainage, which projects eight or ten inches beyond the chest wall. To the end of this a compressed rubber bulb is attached, which thus exerts a continuous aspirating force on the pleural cavity. If greater aspirating force is desired, the air can be partially exhausted from the pleural cavity with a Potain aspirator, after which the bulb is attached, or a larger rubber bulb of stiffer rubber may be used, such as a Politzer bag, or the bulb used in connection with the Ewald stomach tube. However, the continuous slight aspirating force obtained by this small bulb, which this patient is wearing, has accomplished the purpose. It is not desired to obtain the expansion of the lung immediately, but this is accomplished gradually in the course of several days. This apparatus has the advantage over the Van Hook apparatus of simplicity, and of allowing the patient his freedom, if as is the case here, the patient is able to be about immediately after the operation.

In applying the zinc oxid ointment and rubber dam to the chest wall it was found that particles of the zinc oxid ointment were forced into the pleural cavity through the opening alongside of the drainage tube, to be later discharged through the drainage tube. In using the Bryant apparatus this was avoided by applying broad strips of zinc oxid adhesive plaster to the chest wall over the drainage opening. This was perforated with the rubber drainage tubing, and the joint was made tight around the tube by a purse-string suture in the adhesive plaster as before.

Dr. Miller exhibited a second specimen of a uterus which was the seat of multiple myomata, complicated by sarcoma. The history of the case was as follows: A woman 51 years old, who had not yet passed the menopause, had noticed that she began to flow profusely six months previously. The flow increased in quantity and duration, till finally she flowed continuously. There were no other symptoms aside from the weakness and pallor attendant on the loss of blood. There was moderate loss of flesh. The pelvic examination showed the uterus slightly enlarged, with a mass palpable in the fundus, firm, smooth, not tender, not adherent, moving freely with the uterus. The cervix was negative. Otherwise the examination revealed nothing except a right inguinal hernia, and a small adenoma of the thyroid gland that had been present for many years without growth. The urinary examination was negative. The hemoglobin estimation was 45 per cent. The diagnosis of myoma of the uterus was made. The cervix was first dilated with the Bossi dilator, and the uterus was packed to control the hemorrhage, in order to increase the hemoglobin of the blood, if possible, before undertaking a major operation. The hemorrhage stopped for two weeks, and then recommenced. At this time the hemoglobin had reached 65 per cent. The uterus was again packed and the hemorrhage was again controlled. After ten days more the hemoglobin had reached 75 per cent. At this time a supracervical hysterectomy was performed. The patient made a good recovery.

The specimen shows the uterus studded with myomatous nodules of small size. One at the fundus projects into the uterine cavity. The others are situated in the parenchyma of the organ. At the fundus there is a larger nodule, about the size of a hen's egg. These nodules show the characteristic structure of myomata, being firm, hard, white and smooth on cut section. They are distinctly encapsulated, with the exception of the large nodule near the fundus. This tumor on cut section is soft, of a grayish white color, and is not encapsulated, cannot be enucleated as the typical myoma. Its boundaries are not definitely marked. This tumor presents the gross appearance of malignancy. Under the microscope are to be seen side by side sections from one of the fibroids, and of the sarcoma at the fundus. The first shows the characteristic arrangement of the fibers in whorls seen in typical fibroid, while the second is entirely cellular, being composed of small round cells, with little intercellular substance and infiltrating the muscle. The microscopic diagnosis is round-celled sarcoma of the uterus.

We have here an interesting example of fibroids and sarcoma occurring together in the same uterus. The coincidence of sarcoma and fibroid is strongly suggestive that the sarcoma occurs as a secondary degeneration of a pre-existing fibroid. Sarcoma of the uterus is a relatively rare occurrence. It is present about one-eighth as often as carcinoma. It occurs as a complication of fibroid of the uterus in from $1\frac{1}{2}$ to 3 per cent. of all cases of fibroids. Lewis (*ILLINOIS MEDICAL JOURNAL*, October, 1905), has gathered 1,518 cases of fibroids of the uterus from the literature. Among this number there were 22, or 1.45 per cent., that were complicated by sarcoma of the uterus. This case presented the clinical picture of a myomatous uterus. There was nothing in the history to suggest the presence of a malignant growth. The growth was still confined to the uterus. There has been no evidence of metastases. Up to the present there has been no signs of recurrence. The uterus was extirpated six months ago. This period is, of course, too short to be assured of the absence of metastases.

On motion the society adjourned.

FREDERICK K. SIDLEY, *Secretary*.

SANGAMON COUNTY.

The Sangamon County Medical Society held its regular monthly meeting in Lincoln library, September 10. The meeting was called to order by the president, Dr. Berry. The minutes of the previous meeting were read and approved. The application of Drs. Don W. Deal and H. A. Aschauer, both of Springfield, were read and referred to the board of censors. Dr. Priest, of Williamsville, and Dr. Blankmeyer, of Springfield, were elected to membership. Dr. Griffith, as chairman of the Defense Fund, read a letter from Dr. Evans concerning the plans for organization. Dr. Griffith also read a letter from a committee of Chicago physicians which outlined the manner in which the new organization intends to handle damage suits against physicians. On motion of Dr. Langdon, Dr. Griffith's report was received. As Dr. J. Whitefield Smith, of Bloomington, is to talk to the society especially on the subject of defense at the October meeting the matter was laid over until that time.

Dr. Bullard read the essay of the evening on Reflex Headaches. The following classification of headaches by Stevens, was given: 1. Organic headaches; 2. Headaches from cerebral hyperemia; 3. Headaches from cerebral anemia; 4. Reflex headaches; 5. Toxicemic headaches; 6. Hysterical headaches. The subject in general was discussed and illustrations of each type given.

The general class of reflex headaches was subdivided and those cases depending on the fifth nerve were considered more in particular. The anatomy of the parts involved was reviewed. The author stated that reflex headaches included about 75 per cent. of all headaches and that about 80 per cent. of these are due to eye-strain. Unbalanced muscles, astigmatism, errors in refraction, continued use of the eyes, nasal catarrh, etc., were discussed with regard to their causal relation to headaches. The treatment outlined for this class of cases was the removal of the

several causes, by suitable local treatment in the catarrhal conditions and the securing of normal vision by proper glasses.

An interesting case was reported in which double abscess of the antrum caused intractable headaches for two years. The nasal walls of each antrum were removed and the cavities curetted and packed. One side was permanently cured, the other has recently caused more trouble and received the same treatment as before. A case of double frontal sinusitis was also reported in which relief was obtained by removal of middle turbinates and gradual dilatation of the openings to the frontal sinuses by a probe armed with cotton, saturated with cocain and adrenalin.

The paper was well received and discussed with much interest. Dr. Kelly said that many cases of reflex headaches seemed to be incurable, in which cases recourse to the coal-tar products was advisable. Dr. A. D. Taylor advised operation on the frontal sinuses, when other efforts at relief failed. Dr. Langdon thought that many cases might be cured by the protoiodid of mercury; but that genuine migraine was well nigh incurable. He pointed out the hereditary tendency in these cases and noted their close relation to epilepsy. Dr. Berry thought that headaches accompanied by vomiting were usually gastric in origin but might be reflected from any other part of the body. Dr. Hagler said that headaches that could be relieved by full doses of belladonna were pretty certainly due to eye-strain. Dr. Hagler and Dr. Dixon each related cases in which headaches were due to irritation caused by conjunctivitis resulting from crab lice.

The meeting closed in order.

R. D. BERRY, *President*.
C. R. SPICER, *Secretary*.

SANGAMON COUNTY.

The Sangamon County Medical Society held its regular monthly meeting October 8, in the Lincoln Library. Minutes of the previous meetings were read and approved. Drs. John W. Deal and H. A. Ashauer, of Springfield, were elected to membership. Dr. Kreider read and moved the adoption of the following resolutions, which had been adopted by the Montgomery County Medical Society:

WHEREAS, The legislature of the State of Illinois has found it necessary for the protection of society to pass laws prohibiting the indiscriminate sale and distribution of medicines by incompetent and unscrupulous itinerant vendors of the same; and

WHEREAS, We regard such sale and distribution of medicines dangerous to the welfare of the public; and

WHEREAS, In order to evade the liability under said laws, we find that many druggists lend themselves to such fraudulent and incompetent purveyors of medicine by becoming sales agent for them; therefore, be it

Resolved, That we, the members of the Sangamon County Medical Society, condemn the action of the druggists who serve as tools and agents of such wandering frauds; and be it further

Resolved, That we regard druggists who stoop to such practice, as conspirators against said laws and unworthy of the confidence of the medical profession, and that we deem it wise in the future to withhold our patronage from all druggists who lend themselves to this nefarious traffic; and be it further

Resolved, That a copy of these resolutions be sent to every physician and druggist in the county; and to the editor of the ILLINOIS MEDICAL JOURNAL, with the recommendation that other county societies take similar action.

The resolution was unanimously adopted by the society.

Dr. J. Whitefield Smith, of Bloomington, gave a talk on the Medical Defense Fund. The doctor referred to the efforts that had been made at various times by the physicians of the state to establish a fund for the defense against malicious prosecution. He called attention to the fact that the house of delegates of the Illinois State Medical Society was a properly delegated body and acted quite within its authority in voting the fund. He spoke of the fund accumulated in the

past five years by the physicians of Chicago and noted the fact that in that time the malicious prosecutions had been reduced by more than 75 per cent. Many other, good points were brought out to show the advantages of united defense. The difficulties already encountered and to be expected later were carefully considered.

The discussion was generally favorable to the adopted plan. Dr. Langdon, while favorable to united defense, expressed a doubt as to whether the proposed assessment would be sufficient. Dr. E. E. Hagler, also favorable to defense, thought it of great importance to employ counsel specially versed in this particular branch of law. He related an instance in which he had seen a case easily won for the defense by his attorney holding the plaintiff strictly to the few questions that were properly admissible in the case.

Dr. Hopkins gave an informal talk on Medical Education in Europe. He spoke of the opportunities in all the departments of the hospitals of Vienna owing to the large amount of clinical material, the easy access to the different hospitals, the complete classification of the cases and the limited numbers in the special classes. He reviewed the work in several of the clinics and noted the high mortality in certain classes of cases which was due, he thought, to the fact that many cases were operated on when in almost a hopeless condition. The doctor spoke of the high standing and the efficient work of the American Medical Society of Vienna. The hospitals and general medical aspect of Paris were considered at some length. The courtesies extended to American students by French professors were especially noted.

In discussing Dr. Hopkins' talk, Dr. Dixon contrasted the work he had seen abroad with that done by the Mayo brothers, much to the credit of these gentlemen.

In closing the discussion, Dr. Hopkins expressed the opinion that many erroneous impressions had been gained from the teachings of the Mayos. He related a case where he had seen this opinion confirmed by a good operator's mistake.

The meeting closed in order.

R. D. BERRY, *President*.

C. R. SPICER, *Secretary-Treasurer*.

VERMILION COUNTY.

The Vermilion County Medical Society met at Rossville, Oct. 8, 1906, in Masonic Hall. The president and secretary not being present, C. E. Wilkinson was elected president pro tem. and L. B. Russell, secretary. The minutes of the September meeting were read and adopted. The transfer of Dr. Rachel Cooper from the Champaign County Medical Society was accepted and the names of S. R. Wilson, of Rossville, and J. M. James, of Henning, were proposed for membership.

The program was: Typhoid Fever; Diagnosis—Special and Clinical, by Leroy Jones, of Hoopeston. Discussion opened by Isaac Mayhugh, of East Lynn.

Adjourned to the Williams Hotel for dinner, after which the program was resumed at 7:30. The following papers on Tuberculosis were then read: Medical Aspect, C. E. Brown, Rossville; Surgical Limitations, W. A. Cochran, Danville; Discussion opened by R. S. McCaughey, Hoopeston.

Adjourned.

L. B. RUSSELL, *Secretary, Pro Tem*.

BRAINERD DISTRICT MEDICAL SOCIETY.

This Society held its 119th quarterly meeting at Mason City, Oct. 25, 1906. A. L. Cook, of Mason City, read a paper on Tuberculosis. Dr. B. W. Hole read a paper on Premature Birth. A number of members were in attendance and a good meeting held.

NEWS OF THE STATE.

Dr. Edmund J. Doering, Chicago, has returned from Europe.

Dr. G. Fordyce, Streator, is suffering from an attack of appendicitis.

Two cases of smallpox are reported from Hillary, Vermilion County.

Dr. H. S. Hughes, of Buffalo, has sold his practice and moved to St. Louis, Mo.

Dr. and Mrs. Arthur R. Elliott returned from Europe the latter part of October.

The Isolation Hospital, Granite City, was burned October 16, with a loss of \$1,500.

Dr. Jonathan Dearborn, Mount Sterling, celebrated his eighty-first birthday, October 6.

Dr. S. S. Beaupre has been appointed health officer of St. Anne, vice Dr. D. Henry Pelletier.

Dr. Howard Crutcher, chief consulting surgeon of the Alton System, will, it is reported, move to Mexico, Mo.

Dr. James W. Sanders, Decatur, has been elected a member of the board of directors of the Bethsaida Hospital Association.

The plans and specifications for the Graham Hospital, Canton, are nearly completed and construction will be begun this fall.

Dr. Carl Hays, a recent graduate of the St. Louis Medical College, left Pleasant Plains for Midland, Texas, where he will practice.

Dr. O. H. McIntosh, of Pleasant Plains, has bought the practice of Dr. Benton W. Hole and will remove to Tallula, Menard County.

Dr. C. M. Bowcock, of Springfield, has returned from Rochester, Minn. While there he was successfully operated on for gallstones.

Dr. J. S. Clark has finished his services as interne at the Illinois Charitable Eye and Ear Infirmary and will enter practice in Freeport.

Dr. E. A. Bleuler, of Carlinville, has sold his practice to Dr. F. M. Wood, of Holmdel, N. J., and will move November 1 to Seattle, Wash.

By the will of the late Adolph Loeb, \$500 was bequeathed to the Michael Rees Hospital and \$250 to the Alexian Brothers' Hospital of Chicago.

Dr. Parley W. Monroe, of Springfield, has removed to the City of Mexico, Mexico, where he will form a partnership with an American physician.

Dr. Broughton's sanitarium at Rockford has been incorporated, with a capital of \$40,000, by Dr. Russell Broughton, J. T. Robertson and R. K. Welch.

The Chicago City Council finance committee, on September 28, authorized the health commissioner to purchase an automobile for emergency inspection work.

Dr. Anders Doc, one of the delegates of the Norwegian National League at the coronation of the king of Norway, has returned after an absence of four months.

Dr. D'Orsay Hecht has been elected assistant professor of nervous and mental diseases and medical jurisprudence at the Northwestern University Medical School, Chicago.

Typhoid fever is reported in thirty-five counties of the state. Dr. Egan has asked physicians in these counties to send in reports regarding the condition of the water supply.

Five cases of smallpox are reported at Galesburg, with three foci of infection. The special need of the city is an isolation hospital, which will probably be built in a short time.

Dr. J. S. Clark has returned to Freeport after a term of service as resident surgeon in the Illinois Charitable Eye and Ear Infirmary, Chicago. He is associated with Dr. W. J. Rideout.

Dr. Alfred Schalek has been appointed professor of dermatology and genito-urinary diseases in the Medical College of the University of Nebraska, Omaha, and has moved to that city.

A case of smallpox in a colored woman is reported from Moline. Health Commissioner Meyer has instructed the superintendent of schools that all children in the infected district must be vaccinated.

Dr. H. C. Betts, an interne at the Cook County Hospital, was seriously injured by an explosion of chemicals in the drug room of the hospital. The explosion occurred while Dr. Betts was mixing oil of wintergreen and chlorate of potash.

On October 3, the first month of the tuberculosis camp at Dunning ended. Ten men and women are under treatment and more are expected. Another portable house, which will accommodate more patients, is almost ready for occupancy.

An epidemic of diphtheria has reached such dimensions in Brimfield that schools have been ordered closed and public meetings have been prohibited. Four cases of scarlet fever and five cases of diphtheria are reported from Moline.

The People's Hospital, Chicago, will move into a new building on the corner of Twenty-third Street and Archer Avenue. The new building will cost \$40,000, and will afford accommodations to a larger number of patients than the hospital can now accommodate.

The board of education of Marseilles has ordered the schools of that city to be closed for an indefinite period on account of diphtheria. Sunday school meetings and other gatherings have been prohibited, and a strict quarantine has been established at the infected points.

The Health Department of Chicago reports that at present the health department has a record of only about 60 per cent. of the births in Chicago, and legislation is required which will make it necessary to present a certificate of birth before a child can enter the public schools.

The Presbyterian Hospital has filed a claim for \$50,000 against the estate of the late Marshall Field, who, it is claimed, made a tentative bequest of that amount conditional on the donation of \$400,000 to the

institution by other persons. It is related that this money has been raised by other persons.

Dr. Augustus H. Malm, Princeton, coroner of Bureau County, by virtue of a provision of the state law, will also take the office of sheriff of the county for two months. The law provides that if the sheriff dies within a year of the next succeeding election, the coroner shall fill out the unexpired term.

At a regular meeting of the Decatur Medical Society, September 25, it was decided that the names of members should not be mentioned in connection with medical matters in the daily press and that if such notice should appear, the physician in question would be requested to explain at the next meeting of the society.

Dr. Sidney McLeod, physician for the International Harvester Company, South Chicago, was injured by the wrecking of a police patrol wagon while on his way to answer an emergency call. The horses became frightened by the glare of a blast furnace and plunged down an embankment, wrecking the wagon and injuring all of the occupants.

Dr. Ferdinand Henrotin, Chicago, is compiling a book, at the request of President Brundage of the County Board, which will contain histories of unusual and extraordinary medical and surgical cases, which have come to the attention of the County Hospital staff. Articles will be written by Dr. Henrotin and other members of the staff of the hospital.

The State Board of Health has called the attention of mayors, chiefs of police and license-issuing officers of municipalities of Illinois to the fact that in issuing licenses to itinerant vendors of medicine who do not hold licenses as such, issued by the State Board of Health, they are approving and giving their sanction to a direct violation of the state law.

Miss Carrie Buzzell, a stenographer, living at 144 Van Buren Street, has brought suit for \$20,000 damages against Dr. John T. Webster, who, she asserts, left a broken needle in her body after a surgical operation. Dr. John T. Webster, of 6427 Stewart Avenue, stated to a reporter that he had no knowledge of the case nor any recollection of having treated Miss Buzzell.

The heirs of John Gonsalves, Springfield, have brought suit against Drs. Daniel M. Otis and Charles G. Graser for \$5,000 damages. They allege that following the death of Gonsalves at the hospital on August 8, a postmortem was held without their consent. They declare that the body was mutilated, and asked that the surgeons performing the autopsy be made to pay heavy damages.

Dr. George A. Zeller, superintendent of the Illinois Hospital for the Incurable Insane, Bartonville, in a paper to be read before the State Conference of Charities, recommends the transformation of the Soldiers Orphans' Home at Normal into a hospital for epileptics. There are, he says, 6,000 epileptics in the state; of these 1,400 now receive aid in some form, and the need for such an institution is urgent.

Dr. Sarah Hackett Stevenson, of Chicago, a prominent member of women's clubs and medical societies for many years past, is reported in a very critical condition. Dr. Stevenson suffered a stroke of paralysis

about three years ago, since which time she has been gradually failing. She has been removed to St. Elizabeth's Hospital, and much anxiety is felt by her numerous friends on account of her present condition.

It is reported from Winchester that, during September, a man calling himself W. A. Magee and claiming to come from Chicago, traveled through the northern part of Scott County, selling medicine to a number of farmers and taking their notes in payment for his preparations. The Scott County authorities would be glad to have information regarding the movements or the whereabouts of this individual as a basis for prosecution.

Frost and Granger, architects, have submitted plans and estimates for the George Smith Annex to St. Luke's Hospital, Chicago, which is to be erected in memory of George Smith, formerly a prominent member of the Chicago Board of Trade. The addition will cover 135x160 feet. The main building to be six stories, of fireproof steel construction, pressed brick and stone exterior and will be erected at the cost of \$450,000. It will contain accommodations for 150 private patients.

The Illinois State Board of Health is inaugurating a vigorous campaign against itinerant vendors of medicine, who are doing business in the state in violation of the statutes. According to the state law, no person is authorized to sell drugs or medicines from house to house, or any public place, and all who do so are liable to a fine of \$100, or imprisonment for thirty days. This fact should be noted and acted upon by county societies and physicians in those localities which are visited by itinerant fakirs.

The American Association of Railway Surgeons met in Chicago at the Palmer House, October 19 and 20. A large number of members of the Association were in attendance and numerous papers were read. The following officers were elected for the coming year: President, W. S. Hoy, Wellston, Ohio; First Vice-President, M. Cavana, Silvan Beach, N. Y.; Second Vice-President, Charles H. Mayo, Rochester, Minn.; Third Vice-President, S. H. Burnside, Wichita Falls, Texas; Secretary, H. B. Jennings, Council Bluffs, Iowa; Treasurer, T. B. Laey, Council Bluffs, Iowa; Editor, Louis J. Mitchell, Chicago.

Dr. Ernest Wertheim, professor of gynecology in the University of Vienna, spent a week in Chicago early in October as the guest of the Chicago Gynecological Society, and gave clinics at the Postgraduate Hospital and the Presbyterian Hospital. He was entertained by Dr. Gustav Koliseher at a dinner at the Chicago Beach Hotel and by Dr. Franklin H. Martin at a luncheon at the Union League Club. A banquet was given in his honor, October 10, by the Chicago Gynecological Society, at the close of which the guest of honor read a paper before a joint meeting of the Chicago Gynecological Society and the Chicago Medical Society on "Radical Abdominal Operation in Carcinoma of the Cervix Uteri."

The sixty-seventh annual session of the Military and Medical Association was held October 18 at Macomb. A large number of physicians from all over the district were present. Addresses were delivered by Dr.

James A. Egan, secretary of the State Board of Health, on the relation of the state to the public health, and by Dr. J. W. Pettit, of Ottawa, medical director of the Ottawa Tent Colony, on tuberculosis. A number of other papers were read by members of the society and invited guests. The annual election of officers resulted as follows: President, J. P. Roark, Bushnell; First Vice-President, S. C. Stremmel, Macomb; Second Vice-President, E. E. Davis, Avon; Secretary and Treasurer, F. E. Wallace, Monmouth.

The Chicago Pasteur Institute, Dr. A. Lagorio, director, has issued a report of the results of the preventive treatment of hydrophobia obtained since its establishment July 2, 1890. Since that time, 2,775 patients have been treated for hydrophobia. Of these, 2,474 were bitten by dogs, 84 by cats, 100 by horses, 23 by skunks, 6 by wolves, 29 by cows, 9 by calves, 2 by burros, 4 by coyotes, 1 by a rat, 4 by mules, 5 by pigs, 1 by a sheep, and 31 by hydrophobic human beings. One thousand four hundred and six patients were bitten on the hands and wrists, 388 on the head and face, 359 on the arms, 584 on the legs and thighs and 42 on the trunk. In 1,456 cases, the diagnosis of hydrophobia was confirmed by a microscopical examination of the brain of the animal, or by an inoculation experiment. Seven deaths have been reported, thus giving a mortality of 0.25 per cent. Seven persons abandoned treatment after coming to the institute; two of these were subsequently taken with hydrophobia and died.

MARRIAGES.

L. AUSTIN BURR, M.D., to Miss Josephine Raney, both of Bloomington, Ill., October 17.

HARRY EDWARD CLYDE, M.D., Evanston, Ill., to Miss Jennie Mae Rothrock, of Chicago, October 3.

ARTHUR M. SMITH, M.D., Los Angeles, Cal., to Miss Ellen Leona Milligan, of Chicago, October 18.

C. E. SOULE, M.D., of Byron, Ill., to Miss Nellie S. Mix, at Davenport, Iowa, Thursday, September 27.

DEATHS.

EVA M. L. SCOBELL, M.D., Hering Medical College and Hospital, Chicago, 1899, died at her home in Chicago, September 11, aged 33.

HARVEY DUNN, M.D., St. Louis Medical College, 1867, died at his home in Perry, Ill., September 11, after an illness of several years, aged 72.

J. Y. CAMPBELL, M.D., Chicago Medical College, 1895, for 25 years a practitioner of Paxton, Ill., died at his home near Rochester, Ind., September 21.

GEORGE A. WILLIAMS, M.D., St. Louis Medical College, 1865, one of the oldest practitioners of southern Illinois, died at his home in Hardin, September 30, aged 65.

REUBEN H. BAKER, M.D., Chicago Homeopathic Medical College,

1890, of Pearl City, Ill., died at St. Francis Hospital, Freeport, Ill., October 9, two days after an operation for appendicitis, aged 42.

H. G. VAN SANDT (Years of Practice, Illinois), a veteran of the Civil War, a trustee of the Illinois State Normal School, Charleston, died at his home in Montrose, Ill., September 21, from cerebral hemorrhage, aged 63.

JAMES MOFFITT, M.D., Rush Medical College, Chicago, 1868; who retired from practice in 1880 on account of ill health and has been an invalid for the past 18 years, died at his home in Monticello, Ill., September 21, from uremia, aged 66.

MARIE E. FRAHM, M.D., Northwestern University Woman's Medical School, Chicago, 1899; formerly a practitioner of Mattoon, died at her home in Tuscola, Ill., September 30, from cerebral hemorrhage, after an illness of one week, aged about 30.

GUILFORD DUDLEY ELDER, M.D., University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1877; a veteran of the Civil War; a member of the McLean County (Ill.) Medical Society, died suddenly, October 1, at his home in Bloomington, from cerebral hemorrhage, aged 59.

JEROME B. SNYDER, M.D., Chicago Medical College, 1864; a veteran of the Civil War; for two years a member of the City Council and for seven years president of the board of education of Polo, Ill.; United States examining surgeon for four years; a member of the Ogle County Medical Society, died at his home in Rowan, Iowa, September 29, after a long illness, from cancer of the stomach, aged 62.

ARNOLD PLUMER GILMORE, M.D., Jefferson Medical College, Philadelphia, 1874; formerly of Winona, Minn., but for more than 20 years a resident of Chicago, and a specialist on diseases of the eye and ear; president of the Columbus Safe Deposit Company, and one of the principal owners of the Columbus Memorial building; one of the members of the first board of trustees of the Sanitary District, died at his home in Chicago, October 10, from Bright's disease, after a long illness, aged 55.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

The following new members from Illinois have been received during the month of October:

Asbury, I. M., McLeansboro.
 Butterfield, E. H., Ottawa.
 Blech, G. M., Chicago.
 Behrendt, Alex., Chicago.
 Bak, E. W., Chicago.
 Brown, M. R., Chicago.
 Carroll, C. L., Taylorville.
 Dewey, Grace, Jacksonville.
 Holmboe, A., Chicago.
 Hutchinson, Robert, Capron.
 Harlan, J. D., Fairfield.
 Lindley, A. M., Urbana.
 Lyon, C. M., McLeansboro.
 McDowell, W. D., Chicago.

McGrath, W. W., Savanna.
 Miller, R. C., Shannon.
 McCall, T. E., Vienna.
 Moore, W. H., Dixon.
 Parker, C. A., Chicago.
 Struzynski, L. M., Joliet.
 Shapiro, H. B., Chicago.
 Thompson, H. L., Harrisburg.
 Taylor, J. L., Springfield.
 Threadgill, J. M., New Douglas.
 Wedge, D. C., Ipava.
 Wagner, T. H., Joliet.
 Woodside, E. E., Johnston City.

ILLINOIS STATE MEDICAL SOCIETY

MEDICO-LEGAL COMMITTEE.

EXECUTIVE COMMITTEE.

FROM ILLINOIS MEDICAL SOCIETY.

W. A. Evans, 103 State St., Chicago. Central 2740.	C. D. Pence, 859 Turner Ave., Chicago. Canal 1335.
II. N. Moyer, 103 State St., Chicago. Central 2751.	E. W. Weis, Ottawa, Ill. M. L. Winstead, Wetaug, Ill.

FROM CHICAGO HOMOEOPATHIC MEDICAL SOCIETY.

N. B. Delameter, 31 Washington St., Chicago. Central 1926.	J. B. Cobb, 42 Madison St., Chicago. Central 32.
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GENERAL COUNSEL.

Calhoun, Lyford & Sheean, 806 The Rookery, Chicago.

County and Representative.	Address.	County and Representative.	Address.
Adams—John A. Koch.....	Quincy	Lee—E. B. Owens.....	Dixon
Alexander		Livingston	
Bond		Logan—Carl Rembe.....	Lincoln
Boone		McDonough—Arthur Adams.....	Macomb
Brown—William Parker.....	Mt. Sterling	McLean—E. Mammen.....	Bloomington
Bureau—C. A. Palmer.....	Princeton	Macon—M. T. Hefferman.....	Decatur
Calhoun		Macoupin—J. S. Collins.....	Carlinville
Carroll—G. W. Johnson.....	Savanna	Madison—J. N. Shaff.....	Alton
Cass—John A. Glenn.....	Ashland	Marion—W. D. Richardson.....	Centralia
Cook County, Chicago Medical Society:		Marshall—S. O. Hendricks.....	Henry
W. A. Evans.....	103 State St., Chicago	Mason	
H. N. Moyer.....	103 State St., Chicago	Massac—A. C. Ragsdale.....	Metropolis
C. D. Pence.....	1389 Ogden Ave., Chicago	Menard—Burton W. Hole.....	Tallula
Champaign—H. E. Cushing.....	Champaign	Mercer—M. G. Reynolds.....	Aledo
Christian—J. N. Nelms.....	Taylorville	Monroe	
Clark—R. H. Bradley.....	Marshall	Montgomery	
Clay—E. P. Gibson.....	Louisville	Morgan—J. N. Hairgrove.....	Jacksonville
Clinton—J. J. Moroney.....	Breese	Moultrie	
Coles—J. T. Montgomery.....	Charleston	Ogle—F. N. Mitchell.....	Leaf River
Crawford—L. L. Firebaugh.....	Robinson	Peoria—L. A. McFadden.....	Peoria
Cumberland—W. R. Rhodes.....	Toledo	Perry	
De Kalb—G. W. Nesbitt.....	Sycamore	Platt—C. M. Bumstead.....	Monticello
De Witt—G. S. Edmondson.....	Clinton	Pike—L. J. Harvey.....	Griggsville
Douglas—W. S. Martin.....	Tuscola	Pope	
Edgar		Pulaski—M. L. Winstead.....	Wetaug
Edwards—C. S. Brannan.....	Albion	Putman	
Effingham—J. B. Walker.....	Effingham	Randolph—H. C. Adderly.....	Chester
Fayette—E. W. Brooks.....	St. Elmo	Richland	
Franklin		Rock Island—G. L. Eyser.....	Rock Island
Fulton—W. S. Strode.....	Lewistown	St. Clair—F. E. Auten.....	Belleville
Gallatin—T. Alfred Jones.....	Ridgeway	Saline	
Greene—H. A. Chapin.....	White Hall	Sangamon—B. B. Griffith.....	Springfield
Grundy—H. M. Ferguson.....	Morris	Schuyler	
Hamilton—Henry E. Hale.....	McLeansboro	Scott	
Hancock—Charles L. Ferris.....	Carthage	Shelby—Frank Auld.....	Shelbyville
Hardin—J. A. Wernack.....	Karbers Ridge	Stark	
Henderson—J. P. Riggs.....	Media	Stephenson—W. E. Karsber.....	Freeport
Henry—C. W. Hall.....	Kewanee	Tazewell	
Iroquois—Ford—O. O. Hall.....	Milford	Union—J. J. Lence.....	Jonesboro
Jackson—J. T. McAnally.....	Carbondale	Vermilion—Joseph Fairhall.....	Danville
Jasper—James P. Prestly.....	Newton	Wabash—J. B. Maxwell.....	Mt. Carmel
Jefferson—J. H. Mitchell.....	Mt. Vernon	Warren—F. E. Wallace.....	Monmouth
Jersey—John S. Williams.....	Jerseyville	Washington—R. A. Goodner.....	Nashville
Jo Daviess—D. G. Smith.....	Elizabeth	Wayne	
Johnson		Whiteside—Charles G. Beard.....	Sterling
Kane-McHenry—Geo. F. Allen.....	Aurora	White—B. S. Crebs.....	Carmi
Kankakee		Will—Frank C. Fisher.....	Joliet
Knox—Ben. D. Balrd.....	Galesburg	Williamson	
Lake		Winnebago—Charles Winn.....	Rockford
La Salle—E. W. Weis.....	Ottawa	Woodford	
Lawrence—B. F. Hochman.....	Sumner		

ILLINOIS STATE MEDICAL SOCIETY

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 Ralph W. Webster, 100 State St., Chicago...
Secretary

SECTION TWO.

E. H. Ochsner, 710 Sedgwick, St., Chicago.....Chairman
 H. W. Chapman, White Hall.....Secretary

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 Carl E. Black, Jacksonville.
 J. W. Pettit, Ottawa.
 The President and Secretary, ex-officio.

COMMITTEE ON MEDICAL LEGISLATION.

L. C. Taylor, Springfield.
 M. S. Marcy, Peoria.
 J. V. Fowler, Chicago.
 The President and Secretary, ex-officio.

COMMITTEE ON MEDICAL EDUCATION.

Frank P. Norbury, Jacksonville.
 J. F. Percy, Galesburg.
 C. L. Mix, Chicago.

COMMITTEE ON SCIENTIFIC WORK.

The Section Officers.
 The President and Secretary.

COUNTY SOCIETIES.

This list is corrected in accordance with the best information obtainable at the date of going to press. County secretaries are requested to notify THE JOURNAL of any changes or errors.

Adams County.

J. M. Grimes, Pres.....Camp Point
 George E. Rosenthal, Secy.....Quincy
 Alexander County.

Samuel B. Cary, Pres.....Cairo
 J. T. Walsh, Secy.....Cairo
 Bond County.

John W. Warren, Pres.....Greenville
 J. C. Wilson, Secy.....Greenville
 Boone County.

R. W. McInnes, Pres.....Belvidere
 R. B. Andrews, Secy.....Belvidere
 Brown County.

S. J. Wilson, Pres.....Versailles
 F. E. McGann, Secy.....Mt. Sterling
 Bureau County.

J. C. White, Pres.....Seatonville
 O. J. Flint, Secy.....Princeton
 Calhoun County.

I. S. Berry, Pres.....Batchtown
 Stephen Platt, Secy.....Hardin
 Carroll County.

G. W. Johnson, Pres.....Savanna
 H. S. Metcalf, Secy.....Mt. Carroll
 Cass County.

C. M. Hubbard, Pres.....Virginia
 J. A. McGee, Secy.....Virginia
 Champaign County.

C. M. Craig, Pres.....Champaign
 C. D. Gulick, Secy.....Urbana
 Clark County.

Geo. T. Rowland, Pres.....Martinsville
 L. J. Wier, Secy.....Marshall
 Clay County.

W. E. Burgett, Pres.....Louisville
 C. E. Duncan, Secy.....Flora
 Christian County.

M. W. Staples, Pres.....Grove City
 D. D. Barr, Secy.....Taylorville
 Clinton County.

T. E. Alsop, Pres.....Carlyle
 C. H. McMahan, Secy.....Carlyle
 Coles County.

N. C. Iknayan, Pres.....Charleston
 O. M. Ferguson, Secy.....Mattoon
 Cook County—Chicago Medical Society.

G. W. Webster, Pres.....Chicago
 R. T. Gillmore, Secy.....Chicago
 Crawford County.

F. Dunham, Pres.....Robinson
 H. N. Rafferty, Secy.....Robinson
 Cumberland County.

G. E. Lyon, Pres.....Robinson
 W. R. Rhodes, Secy.....Toledo
 DeKalb County.

Geo. W. Nesbje, Pres.....Sycamore
 C. H. Nordoff, Secy.....Genoa
 De Witt County.

J. M. Wilcox, Pres.....Clinton
 A. E. Campbell, Secy.....Clinton
 Douglas County.

E. S. Allen, Pres.....Arcola
 Walter C. Blaine, Secy.....Tuscola

Du Page County.

(Affiliated with Cook County.)
 Edgar County.

W. S. Jones, Pres.....Redmon
 W. H. Ten Broeck, Secy.....Paris
 Edwards County.

W. E. Buxton, Pres.....Samsville
 J. H. Lacey, Secy.....Albion
 Effingham County.

T. J. Dunn, Pres.....Elliotstown
 C. F. Burkhardt, Secy.....Watson
 Fayette County.

H. D. Smith, Pres.....Vandalia
 A. L. T. Williams, Secy.....Vandalia
 Franklin County.

A. G. Orr, Pres.....Benton
 R. E. Poindexter, Secy.....Benton
 Fulton County.

T. R. Plummer, Pres.....Farmington
 D. S. Ray, Secy.....Cuba
 Gallatin County.

I. A. Foster, Pres.....New Haven
 J. W. Bowling, Secy.....Shawneetown
 Greene County.

H. W. Chapman, Pres.....Whitehall
 H. A. Chapin, Secy.....Whitehall
 Grundy County.

W. E. Walsh, Pres.....Morris
 H. M. Ferguson, Secy.....Morris
 Hamilton County.

I. I. Hall, Pres.....Broughton
 G. N. Lyons, Secy.....McLeansboro
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S. M. Parr, Pres.....Fountain Green
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I. F. Harter, Pres.....Stronghurst
 Ralph Graham, Secy.....Biggsville
 Henry County.

J. E. Westerlund, Pres.....Cambridge
 H. W. Waterous, Secy.....Galva
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D. W. Miller, Pres.....Gilman
 Robt. Lumley, Secy.....Watseka
 Jackson County.

O. B. Ormsby, Pres.....Murphysboro
 W. C. Hill, Secy.....Murphysboro
 Jasper County.

H. S. Hinman, Pres.....Newton
 Jas. P. Prestley, Secy.....Newton
 Jefferson County.

J. H. Mitchell, Pres.....Mt. Vernon
 J. R. Whitlock, Secy.....Mt. Vernon
 Jersey County.

A. K. Van Horne, Pres.....Jerseyville
 H. R. Bobannan, Secy.....Jerseyville
 Jo Daviess County.

E. M. Bench, Pres.....Galena
 D. G. Smith, Secy.....Elizabeth

- Johnson County.
- H. D. Larue, Pres.....New Burnside
H. O. Williams, Secy.....Belknap
Kane-McHenry District.
- J. F. Bell, Pres.....Elgin
G. S. Allen, Secy.....Aurora
Kankakee County.
- B. F. Uran, Pres.....Kankakee
A. S. Kenega, Secy.....Kankakee
Kendall County.
- T. B. Drew, Pres.....Oswego
R. A. McClelland, Secy.....Yorkville
Knox County.
- J. H. Brown, Pres.....Rio
G. S. Bower, Secy.....Galesburg
Lake County.
- E. H. Pomeroy, Pres.....Highland Park
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La Salle County.
- F. A. Wiley, Pres.....Carlville
W. A. Pike, Secy.....Ottawa
Lawrence County.
- B. F. Hockman, Pres.....Sumner
C. P. Gore, Secy.....Lawrenceville
Lee County.
- C. H. Ives, Pres.....Dixon
S. W. Lehman, Secy.....Dixon
Livingston County.
- G. C. Lewis, Pres.....Fairbury
John Ross, Secy.....Lutic
Logan County.
- L. L. Leeds, Pres.....Lincoln
H. S. Oyler, Secy.....Lincoln
McDonough County.
- J. B. Bacon, Secy.....Macomb
McHenry County.
(See Kane-McHenry District.)
McLean County.
- Thos. W. Bath, Pres.....Bloomington
O. M. Rhodes, Secy.....Bloomington
Macon County—Decatur Medical Society.
- C. Chenowith, Pres.....Decatur
M. W. Fitzpatrick, Secy.....Decatur
Macoupin County.
- J. M. English, Pres.....Gillespie
E. A. Bleuler, Secy.....Carlinville
Madison County.
- G. W. Hinchey, Pres.....Mors
F. C. Joesting, Secy.....Alton
Marion County.
- J. E. Schoonover, Pres.....Salem
W. W. Murfin, Secy.....Patoka
Marshall County.
- J. W. Potts, Pres.....Lacon
J. A. Swem, Secy.....Henry
Mason County.
- H. H. Hanley, Pres.....Havana
A. L. Cook, Secy.....Mason City
Massac County.
- M. H. Trovillion, Pres.....Metropolis
A. C. Ragsdale, Secy.....Metropolis
Menard County.
- A. L. Britten, Pres.....Athens
Irving Newcomer, Secy.....Petersburg
Mercer County.
- V. A. McClanahan, Pres.....Viola
I. E. Burnett, Secy.....Joy
Monroe County.
- John S. Sennott, Pres.....Waterloo
Elbert J. Lee, Jr., Secy.....Valmeyer
Montgomery County.
- P. M. Kelly, Pres.....Litchfield
H. F. Bennet, Secy.....Hillsboro
Morgan County.
- Josephine Milligan, Pres.....Jacksonville
David W. Reid, Secy.....Jacksonville
Moultrie County.
- W. E. Stedman, Pres.....Sullivan
F. P. Zerfass, Secy.....Sullivan
Ogle County.
- J. A. Johnston, Pres.....Byron
F. W. Mitchell, Secy.....Leaf River
Peoria City Medical Society.
- R. A. Kerr, Pres.....Peoria
F. K. Sidley, Secy.....Peoria
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ORIGINAL ARTICLES

FUTURE PROGRESS IN SURGERY.*

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CHICAGO.

Whercin, whereby and by whom shall this progress come? Time was, and not so long ago, when the surgeon was not unlike the ancient navigator, who had undiscovered oceans and continents in prospect to inspire his ambition and to stimulate his efforts for discovery. But now there remains as little in the surgical world in the way of unexplored organs and regions as there is for the circumnavigator of the physical world in the way of new seas, islands and continents. Every organ of the human body has been mapped, charted and explored; every organ and structure, every nook and corner have been invaded and subjected to surgical procedure, and every organ not essential to life has been completely extirpated when diseased conditions demanded it. Thus, the limits of the field, considered as a whole, have been reached. It hardly needs to be said that this kind of progress and this degree of progress have been made possible by the discovery of surgical anesthesia and the knowledge of the rôle of bacteria. Could our predecessors have foreseen this estate into which we have come, they would have thought of surgical perfection. But, with our vantage ground, our increased knowledge and our superior resources, we recognize more unsolved problems pertaining to surgery than the fathers ever dreamed of. As in any department of science, each step in advance, every problem solved, brings us face to face with an ever-increasing number of new, though often minuter, problems calling for solution, just as the arterial trunk divides and subdivides and its branches ramify more and more the farther we trace it. Hence it is that, although in many things of the surgery of to-day, we ourselves are disposed to think of having attained perfection, it is not permissible to conceive of finality in anything pertaining to the art and science of surgery, any more than in any other department of medicine or in any matters scientific.

* Address on Surgery, delivered before the Surgical Section of the Illinois Medical Society at Springfield, May 15, 1906.

In his every-day work, the surgeon sees the problems pressing for solution, the many shortcomings which beset his art and the many obstacles to progress which must be overcome. Some of these relate to present methods of operating, the faults of which the future will disclose. Some relate to his armamentarium, with its ever-present tendency to become complex and cumbersome. Some affect the question of the extent and frequency of operative measures required, which will wax or wane with the growth of knowledge. Others again pertain to the theories of the origin and life history of many surgical affections and to the great underlying principles. Still others hinge about micro-organisms, infections and artificial immunity. It would be hazardous to attempt to prophesy along what lines epoch-making discoveries in surgery will soonest come, or where the next surgical revolution will strike. We may, at least, hope it will be in the domain of the malignant diseases, for it is here that the greatest exigency lies. Discoveries in this field, corresponding in scope and significance to those of Pasteur and Lister and their co-workers and successors relating to surgical infections, would, indeed, bring a revolution, one which all humanity awaits, for which surgeons have longed and thousands have wrought. Only by comparing the theories and management of inflammation, which prevailed less than a generation ago, with those of the present time can we form an adequate conception of where we are to-day, in our theories and management of carcinoma and sarcoma, compared with the high plane we would occupy should there come a revolutionizing discovery in this field, comparable to that which ushered in the antiseptic era. From the very nature of the subject, there may never be a discovery of such revolutionizing proportions. But such a possibility is ever before us in imagination with a hope of realization. In the meantime, we must rely for progress on such gradual accumulations of knowledge and piecemeal discoveries and improvement of method as shall come day by day and year by year. In this way, there have come that steady improvement and that marked progress in the operative treatment, especially of visceral carcinoma, in the last ten years, even in the last five years, which, it is certain, the mass of the medical profession does not yet apprehend. Consequently, while our present views concerning the nature of carcinoma, its causes and the methods of its dissemination prevail, we may only look for further advancement by means of earlier diagnosis, earlier operation and more complete extirpation. This is based on the almost universally accepted opinion that the disease is primarily of strictly local origin. The evidence in favor of this view would seem to be unimpeachable.

The next most urgent demand for surgical progress lies in the field covered by the various types of bacterial invasion. For, notwithstanding the immense strides that have been made in the prevention and treatment of all the infective processes and their complications since the advent of the antiseptic regime, and notwithstanding the fact that herein surgery has made more actual progress in the last three decades than in all previous history, it yet remains true that there is more sacrifice of life and limb and organs from bacterial infection than from all other sources com-

bined, of those which come within the sphere of surgery. It is possible that, some time in the future, there shall be found a way to control or to eradicate a focus of tuberculous infection of tissues or joints or organs, or a similarly situated focus of any one or of all the many kinds of infection which give rise to suppuration, septicemia, pyemia and necrosis, without resort to operative surgery. Up to the present time, but little verifiable progress has been made in this direction. But there is ground for hope that, in the not distant future, at least some of those infections, which are now beyond the reach of surgery, either because there is, from the first, no accessible focus, or because of neglected opportunity when there is such a focus, may be controlled by antitoxin serums which shall here be as reliable and efficient as that with which diphtheria is now treated. The results of the work that has been done in the way of inducing artificial immunity, though somewhat disappointing, are yet full of promise. As the present method of treating diphtheria has so nearly abolished the necessity of operations for laryngeal obstruction in this disease, so likewise it seems not improbable that similar methods, applied to other infections, may still further reduce the necessity for surgical operations in certain cases. But this would mean surgical progress, nevertheless. So, until the day arrives when artificial immunity against these infections can be established, improvement in this field, as in that of the malignant diseases, must come from the earlier recognition of the focus of infection, earlier resort to surgical measures and more perfect technic.

Whereby and by whom shall the desired progress be brought about? What are the factors, by what means and through what channels? Increase of knowledge is the great desideratum. When surgery consisted largely in dealing with fractures, dislocations, and wounds of the external parts of the body, a knowledge of gross anatomy was the surgeon's chief mental equipment. But, as the centuries came and went, he found that, would he understand the healing of wounds and the repair of lesions, he must know physiology. Would he distinguish between the normal and the morbid in anatomy and physiology, he must master pathology. Would he know the meaning of infection and how to prevent and control it, he must acquire the principles of bacteriology. Would he be equipped to appreciate the correlations and the ramifications of all these branches and sources of knowledge in the fullest degree in their bearing on his science and art, he must apprehend much of modern chemistry, with its correlated branches, physiological chemistry and physical chemistry. And, finally, would he sit in judgment on the therapist, as he is wont to do, he must know full well the resources and limitations of therapeutics.

Thus has surgery developed, from what was originally little more than mere handicraft, into the commanding position it holds to-day. Perhaps, to a greater extent than the department of internal medicine, does it lay hold on all the tributary sciences and command the aids of experimental and laboratory research; and nowhere are the requirements for accurate and complete diagnosis so imperative as in the realm of operative surgery. Nearly forty years ago Billroth said: "Surgery owes its great revolution in the nineteenth century to its attempt to unite all medical

knowledge in itself; the surgeon who succeeds in this and also masters the entire mechanical side of his art may feel that he has attained the highest ideal in medicine." From this high plane, there will be no retrograde movement. On the contrary, surgery will continue to appeal to the laboratories of anatomy, physiology, biology, pathology, chemistry and physics for light on dark problems, for discoveries and contributions to knowledge, which it can utilize for more perfect work. It will also continue to seek and adopt, from the general practitioner and the specialist in internal medicine, such contributions to knowledge as will aid the surgical side of medicine in the way of better diagnosis, prognosis and treatment. In this manner does surgery "attempt to unite all medical knowledge in itself" of whatever kind and from whatever source.

The surgeon's own contributions to the advancement of surgery are of various kinds and are brought about in various ways. The peculiar laboratory of the surgeon is the operating room. Here are his special opportunities for enlarging the boundaries of knowledge. Here he sees the direct connection between symptomatology and diseased organs and diseased processes. He learns lessons in morbid anatomy and morbid physiology which can be learned in no other way. He acquires familiarity with the differential characteristics of gross living pathology, which become available to him for immediate and future use. He has, thus, an advantage over all others, by as much as such knowledge of diseased processes in the living body is superior to that obtained from postmortem examination and museum specimens. This has been emphasized in recent literature, notably by W. J. Mayo. From the nature of things, the practicing surgeon can not engage extensively in laboratory research. But he can furnish the problems for the laboratory worker and it is his to test the results and to pass final judgment on the practical value of the laboratory findings. He may direct experimental work of many kinds which will yield fruitful results. He may be a pathfinder in an unknown field or he may help to straighten and broaden the path into a highway and thus contribute more but get less renown. Not all can be pathfinders, nor should all be; else there would be no thoroughfare. The mountains and the wilderness are full of abandoned first surveys and first trails of the original engineer. A score of other engineers take years to correct and supplement the work of the first or to find a more practical way. There is, however, no necessary reflection on the work of the first; for, if there were no first, there would be no second. So it has been with the barriers to surgical progress hitherto, and so it will be in the future. Original discoveries often prove defective or even useless in themselves, but they yet serve a useful purpose by stimulating other efforts in the same direction. Moreover, they furnish the material and the opportunity for the less conspicuous worker, who makes his contribution by correcting, modifying and supplementing the original. In this way progress is made. Improvement on accepted methods and in accepted doctrine, as in any other department of knowledge and activity, is frequently in the direction of simplicity or a reversion to the ways of the fathers. A conspicuous example is the substitution of the Esmarch constrictor, a plain rubber

band, which leaves nothing to be desired in simplicity and efficiency, for the more complicated and inefficient machinery which preceded it. Another is the present method of reducing dislocations by simple manipulation. In intestinal surgery, the amount of ingenuity that has been expended on mechanical devices for anastomosis has been enormous. Some of these devices were of value in a transition stage, but now they are all but abandoned by surgeons. The number and kinds of intestinal sutures that have been proposed and advocated are too many to be remembered and some of them too complicated for the average understanding. After all this, almost all surgeons have gone back to the simple thread of the ancients and to the simple overwhip stitch of the housewife. In the operative treatment of aneurism, we have had tyings proximal and tyings distal, with varying modifications here and there. But in the last few years we have gone back fifteen hundred years to the method of Antylus, the original operation for aneurism, a simple, rational and efficient method, viz., that of dissecting out the sac and tying both ends of the artery at the sac, when the anatomic conditions will admit of it. Still more recently, Matas has further simplified the operation in certain cases by cutting off the aneurismal sac and sewing up the opening of the artery. Another kind of progress that is in store for surgery is illustrated in the treatment of prostatic hypertrophy. Prostatectomy, hitherto approached with a halting and uncertain attitude, has bounded suddenly, in the last few years, into a position of great prominence, and this without any new light from anatomy, physiology or pathology.

Another desideratum is that the actual practice of surgery shall keep pace with the advance in knowledge and the improvement in method. This would be ideal surgery, indeed. Ideals may be approached, if never reached. That the ideal and the practical are many times far apart may, therefore, be taken for granted. Until all conditions and circumstances surrounding the patient, requiring surgical judgment, shall be under the control of the ideal surgeon, the chasm which separates will remain. But this ideal control is unattainable and the ideal surgeon does not exist. The expert surgeon, however wide his experience, however great his natural endowment and however complete his equipment, has his limitations. He has the frailties that are common to humanity. Sometimes ambition or a thirst for fame rules him. Sometimes the commercial spirit sways his judgment. Sometimes pride of opinion or an overfondness for methods of his own devising and doctrines of his own conception causes him to fall short. Sometimes a prejudice against a rival prevents the open-minded attitude, and so on. Thus is he hindered in his approach to the ideal and fails to bridge the chasm which separates what he might do from that which he actually does. Beside these factors and considerations pertaining to himself, the surgeon is hindered in his desire and his endeavor to approach the ideal by conditions relating to the patient. The control of this factor lies with the specialist in internal medicine, the general practitioner and the public, or the patient himself as a part thereof. The specialist in medicine, though he may not confess it, sometimes retains a lingering remnant of the centuries-old prejudice against

surgery and an unconscious tingle of jealousy of a rival. Or, however expert he may be as a diagnostician, he may fail to recognize that his special field may not yet have "united all medical knowledge to itself." Or he may now and then fail to acknowledge the limitations of therapeutics or the possibilities of surgery at the right moment, and, as a result of any one or of all of these, the surgical judgment, whether rendered by himself or the surgeon, does not always come at the most opportune time for the best surgery. This refers particularly to those affections which surgery has in recent times taken out of the borderland between medicine and surgery. It must be recognized here that there is no sharp line of demarcation between the two and that there never can be. At best, it is a shifting line and it can not be gainsaid that the surgeon is disposed to push it farther afield when opportunity offers.

As for the general practitioner who sees the beginnings of disease and in whose keeping the patient's welfare so largely rests, what shall be said of him or to him? Has he not been lectured in season and out of season? Has he not been told about his supposed shortcomings in early diagnosis, his overweening confidence in drugs, over and over again; or of his hesitancy in calling early surgical advice, his want of alacrity in turning his patient over to the surgical expert? Yes, all of this and much more. Whatever else may be said and whatever his faults in this regard may be, it can be justly claimed, in extenuation, that if the expert surgeon and the expert diagnostician, with all their experience and their opportunities, often fail to give the patient the best chance for life and health through the resources of surgery, the general practitioner may be allowed to fall short, proportionally, without undue criticism. Ideal surgery requires of the general practitioner, not that he himself shall undertake to do operations for which he may not be qualified and for which he may not have had the requisite experience and for which he has not adequate facilities; nor that he fly to the specialist with every case requiring operation. The question of who shall operate in a given case is a negligible one for present purposes. But it does require of him that he shall keep fairly abreast with the status of surgical knowledge bearing on diagnosis and the resources and possibilities of operative surgery. It also requires that he shall have the qualifications, either to pass an up-to-date surgical judgment, when occasion calls for it, or that he shall recognize his inability to do so and seek help. It demands that he shall know the fact and make it a part of himself, that there is, at present, only one rational way to treat carcinoma, namely, by complete extirpation, and that the earlier the disease is recognized and the more thoroughly it is extirpated, the greater the number of complete cures; and, above all, that the responsibility for an early diagnosis rests on him more than on any other. Much of the same may be said of all acute infections. He should be thoroughly imbued with the fact that there is no drug treatment that will in any degree arrest these affections, that early relief of tension and evacuation of pus is the only way to prevent local and general disaster, whether the infection be of the finger, of the pleural cavity, of the brain or within the abdomen or pelvis. He must know, always and everywhere, that it is

the last-resort operation, those that are done because everything else has failed, that bring opprobrium on surgery, disrepute to the surgeon and prejudice to the minds of the public against all surgery. It rests with the general practitioner, also, to educate the laity as to the general safety of properly planned and properly executed surgical operations and that there are many conditions which neither time nor drugs nor applications nor manipulations of any sort will either palliate or cure.

Specialism is chargeable with much that hinders surgical progress, especially as it affects the general practitioner and the laity.

Specialism is in a degree inevitable, necessary and wholesome in practice, in teaching, in literature and in medical societies. But, in all these directions, it has become exuberant and top-heavy. It has much to its credit in the medical world, but it has also a debit column, in which there are many items. The one of these debit items that is most appropriate for consideration here, as an example, pertains to specialism in medical societies. The excessive tendency of the specialties to seclusion and to build Chinese walls, each around itself, is illustrated by many of the so-called national organizations. While purporting to be national in scope, many of them grew out of sectional questions and are maintained on a sectional basis. Some of them consist of a handful of men, taken from a few of the larger cities. Some of them are so small that it is difficult to get a quorum for their annual gatherings. The same tendency exists in the larger cities. In Chicago, for example, there is the Surgical Society which represents, in theory, at least, the whole surgical field without any limitation. Then there are several other organizations which, on paper, at least, represent segmentations of surgery more or less minute. There is a legitimate place for a few national societies of specialists, organized on broad lines and conducted for the betterment of the principles and practice of the fields which they severally represent. The same can be said of the situation in the larger cities. But when we go beyond this the good and legitimate purposes for which special societies are supposed to exist come to naught. Every one who has watched the growth and perfection of development of the section work of the American Medical Association can not but feel a pride in the splendid manner in which the various sections have come to represent all departments, divisions and subdivisions of American medicine, the work and the workers of every specialty. This is specialty organization of the highest type and of the most beneficial kind. Every department of the whole medical field is uplifted and the mutual influence and correlation of each department on the others, and of each on the whole, are emphasized and receive their highest degree of expression.

This is the proper place and the occasion is opportune for saying a word about our State Medical Society and its work. Many of us are convinced from observation and experience that it is a mistake to try to conduct our scientific work along special lines and to hold section meetings apart, sitting at the same time. Let there be sections, section officers and section addresses if you will, meeting in rotation, but of one thing I am convinced, namely, that the present plan of segregation is

detrimental and that we should go back to the old three-day session in which every member can hear every paper and every discussion, if he so desires. As it is to-day, we have two sections, one made up of those who operate and the other of those who do not, and neither can hear or take part in the work of the other. Let us abolish the whole separate specialty idea from this society and have a grand democratic three days' mix up of all sorts and conditions of medical men. There are already opportunities in plenty for meetings of specialists for all legitimate and profitable purposes without using the State Medical Society. This plan will make for progress in surgery with all its specialities, for progress in medicine in all of its departments.

PROBLEMS IN APPENDICITIS.*

H. N. RAFFERTY, M.D.

ROBINSON.

In coming before this Section with a paper on what most of you probably consider a hackneyed subject, one should be expected to have something novel to offer, perhaps a more certain method of diagnosis, perhaps a treatment without mortality. To at once satisfy any curiosity you might exhibit, the writer must admit, without delay, that he has reached neither of these most commendable, though high, ideals, but simply wishes to relate some of the appendicitis problems encountered in his six years of general practice, to contribute the widow's mite, as it were, to the generous collection of statistics and deductions therefrom, with which we are already nearly overwhelmed. Indeed, this subject has been so thoroughly discussed and written upon that at first thought one would say there is nothing more to add, that the last word has been spoken; and yet, when we come in actual bedside contact with any one of the many types of this protean affection, can we at once determine on the safest plan of treatment for that individual case? The answer is so plain that "he who runs may read."

In the language of a recent writer, "the vermiform appendix has been cut-off, tucked in, and turned inside out; the patients have been purged, narcotized, packed in ice or baked in poultices; they have been starved, or instructed to walk on all-fours like quadrupeds; leucocytes have been gazed on through the barrel of the microscope, and the urine examined for indican, acetone, or albumin; and yet, with all this study, all of the examinations, a fatal appendicitis, caused by a little non-functioning organ, has doomed many otherwise healthy individuals to an early and untimely end."

It is plain that the reason for this unsettled condition of affairs lies in the fact that we can not make a satisfactory diagnosis of the actual pathologic conditions present in and around the appendix. That the symptoms and physical signs bear no certain relation to the pathologic

* Address on Surgery, delivered before the Surgical Section of the Illinois Medical Society at Springfield, May 15, 1906.

changes we must all admit—most of us having unwittingly added to those “silent cities of the dead” through placing implicit trust in pulse, temperature, pain, tenderness or muscular rigidity, taken either singly or altogether. How, then, shall we remedy this unseemly condition, to the satisfaction of ourselves, and to the increased longevity of those patients with rebellious appendices?

I believe but one answer to this question can come to the mind of the conscientious practitioner, and that is to educate our people to the broad, general understanding, that every inflammatory condition of the appendix is a surgical one from alpha to omega, and should be treated surgically, not as a last resort, but as the routine measure of choice. Let us get their clock-work of surgical consent so set that when the now frightful diagnosis of appendicitis falls on their ears the pendulum of that household will begin to swing methodically, to arrange the operating room and to kindle the fires of sterilization.

When this is accomplished, the term appendicitis will be robbed of its frightfulness and the disease of its mortality. Then our theory and our practice will coincide, while now they do not. Personally, I have for several years believed that in a large series of cases there would be almost no mortality if all were operated on, without delay. And yet I have operated in only about one-half my cases, because of some prejudice of patient or family; or because of the ever-present voice of procrastination whispering in my ear that a great many cases recover, at least for the time, without operation, and why should not this be one of them? The patient is apparently doing well, let us wait and see. And I can say, to my regret, that I have waited, and I have seen. That I have seen my patient, to all intents, recovering from his local peritonitis, which is his safeguard, when the family and friends were congratulating themselves on their foresight and good judgment in objecting to an operation, and laughing in their sleeves at the doctor “who wants to operate for everything,” when I was saying to myself in capital letters “another case of appendicitis cured without the knife,” I say that I have seen this patient cry out with a sudden renewal of his pain, his whole abdomen become rigid, his face drawn and cyanotic, and studded with beads of perspiration which stood out like question-marks of my treatment, his pulse at once thready, and soon imperceptible, and I have seen him relieved by death in twenty-four or thirty-six hours.

To my mind, the timid man who is afraid to venture within the peritoneum, who has the erroneous idea that legitimate surgical procedures kill patients, is a victim of radical conservatism; while he who knows how safely these same paths may be trodden, when guided by the head of judgment and the hand of care; and who knows that the finer points of diagnosis can not be attained through a board-like rigidity; he is the disciple of conservative radicalism, which should be the doctrine of the isolated surgical practitioner.

The writer has been much interested in the article on appendicitis in a recent edition of an English Text-Book on Surgery, by Rose and Carless, who, in common with the mass of English writers, take a very

conservative view of the treatment of these conditions—"not operating in the catarrhal cases, delaying operation for two days in the severe inflammatory ones, and advising operation after a second attack in the recurring or relapsing cases." And then they very calmly proceed to set at naught the foregoing by declaring that "the prognosis is never certain, that the initial symptoms are frequently alike in all varieties, and hence one can never know what course the case is going to take." They then quote Robert T. Morris as saying "the infected appendix is a cap which sometimes snaps, sometimes flashes, and sometimes causes an explosion; and none of us can tell in advance just what is going to happen"—a metaphor to which I can most heartily subscribe.

There are many practical problems to be encountered in appendicitis, although the equations formulated are often paradoxes. Many of these equations can not be solved because of the presence of three "unknown quantities," viz.: (1) The vitality of the patient; (2) the virulence of the invading organisms; and (3) the tissue-resistance of the appendix itself. Eliminate this third unknown quantity, not by computation, but by amputation, and, barring mistakes in technic, the problem is solved.

As a means of illustration, I wish to briefly narrate a few parallel cases as types of those seen by most of us in a general practice:

CASE 1.—Ethel H. I was called 4 miles in the country on the night of December 19 to see a little girl 10 years of age, who had come home from school the afternoon before, complaining of pain in her side. The parents had not considered her very sick until this evening, when the pain had become very severe. I found her with a temperature of 102° F., pulse of 100, the pain radiating from the right side, tenderness over the region of the appendix and marked muscular rigidity. She lay in bed with the right leg flexed at hip and knee, and altogether made a typical picture of a fairly severe case of appendicitis. I explained to the father that an operation might be necessary, quieted the patient with morphin hypodermatically, and arranged to see her in the morning. When I returned that Sunday morning I was startled at the change which had taken place in this girl. She had not rested much during the night, her temperature had dropped to near normal, pulse was 120, the whole abdomen was becoming rigid and tender, though the pain had about ceased. Her bowels were tympanitic, breathing rapid and shallow and facies bad. It was plain that she was developing a general peritonitis. This child had now been sick thirty-six hours, and it seemed to me that she was going to die whether operated on or not. I saw her again a few hours later, with consultation, and we decided nothing could be gained by operation. The downward course in this case was very rapid, as death occurred the next afternoon, within seventy-two hours from the time she came home from school "with a pain in her stomach," and within forty hours from the time of my first visit. There was no history of a previous attack, nor of any severe sickness. An autopsy was not allowed, but from a careful study of the case, and especially considering the cessation of pain at the time the peritonitis began to be general, I believe this to have been a case of gangrenous appendicitis, in which appendectomy within the first

twenty-four hours would have saved the patient's life. I believe I am justified in holding this opinion from the findings and result in Case No. 2 which I am about to relate.

CASE 2.—G. B. This was a case seen by Dr. T. N. Rafferty and myself, in consultation with Drs. R. L. Gordon and G. W. Fuller of Palestine, May 7, 1904. This man was 24 years of age, and had been sick thirty hours. His temperature was $99\frac{3}{5}^{\circ}$ F., pulse 86, and the pain, which had been severe during the night, had about ceased.

He was sitting propped up in a chair, with the right leg extremely flexed. There was marked tenderness over the right iliac fossa, with rigidity of muscles. We hesitated about operating on a man with practically a normal temperature and pulse and no pain; and yet we finally decided to operate, being influenced in this decision by the bad facial expression and the sudden cessation of pain. The appendix was quickly removed, and found to be gangrenous at the distal end, with that thickening and softening of the entire organ which precedes total gangrene. The peritoneal covering of the bowel was violently inflamed for a distance of six or eight inches, and on this account we were doubtful of the outcome. However, the patient's convalescence was without incident, save for a difficulty in getting the first bowel movement (a temporary paresis), and he is now in good health.

CASE 3.—Ethel H., 8 years of age. The father came to our office on the afternoon of July 1, 1904, saying that the little girl had been crying all day with a pain in her bowels, and that I should either send her medicine or go and see her. I told him it would be best to see her, and went at once. This was a case in which the diagnosis could almost be made from a glance at the little patient, as she lay in bed, with both legs drawn up, her respirations short and rapid, the whining cry of pain, the characteristic Hippocratic countenance and the perfect consciousness. Upon examination her temperature was 101° F., pulse 132, the whole abdomen tender and showing muscular rigidity. She placed her finger just over McBurney's point to indicate where the pain began and where the greatest tenderness was. She had accompanied her mother to town on the afternoon before, and had complained of feeling badly during the trip home. There was a history of an attack of fever and pain in the abdomen two years before, at which time no diagnosis was made, the patient recovering in two or three days. Since that time she had been apparently well, except occasionally had complained of pain in her abdomen. Drs. T. N. Rafferty and A. G. Meserve, both of Robinson, consulted with me in this case, and we decided that her chance of recovery, though slender, would be better if treated expectantly. I saw her twice the next day, and was with her on the day following, when she died at 10 a. m. The course of this case was somewhat more rapid than Case No. 1, as the patient lived only sixty hours from the onset of the attack, and forty hours from the time of my first visit. Again, an autopsy was not obtained, but I believe this little girl had a mild attack of appendicitis two years before, which was followed by a latent inflammatory condition, with the occasional attacks of pain, and that at the begin-

ning of this attack there was a perforation of the appendix, with the escape of pus, at least enough in quantity and of sufficient virulence in quality, to excite the most rapid and hopeless general peritonitis I trust it will ever be my lot to see. Might there not have been a different ending to this case if the appendix had been removed after this first attack, granting that a diagnosis was possible at that time?

Just here I want to say, concerning these cases of diffuse septic peritonitis, that the technic developed by J. B. Murphy, with Fowler's position in bed, large quantities of water per rectum, etc., probably offers the patient most in the way of treatment, and I am anxious to know what has been the more recent experience of those best qualified to observe.

CASE 4.—G. P., 24 years of age, occurring in the practice of Dr. L. R. Illyes of Heathsville, Ill., was seen by Dr. T. N. Rafferty and myself on the fifth day of the attack. He showed pronounced septic symptoms, with irregular fever, vomiting, etc. There was some swelling in the right iliac fossa, though not as much as two days before, and no fluctuation or edema of the skin. Dr. Illyes thought him better in most respects, but the persistent vomiting led us to decide to operate. The incision was made below and to the outer side of McBurney's point, and a large abscess found behind the cecum. The appendix had sloughed, leaving a perforation which admitted the tip of the index finger. This patient was in good condition in three weeks, with the exception of the fecal fistula, which closed spontaneously in nine weeks. He proved to be one of Nature's unfortunates, however, as he died from an attack of ptomain poisoning within a year.

CASE 5.—C. G., aged 26 years, came to our office on the morning of Jan. 29, 1906, complaining of pain in the abdomen. On examination, this was found to radiate from the right iliac fossa, where there was some tenderness and very slight rigidity. He gave a history of two previous attacks, the last four years ago, at which time there was a discharge of pus through the bowel, and he was told by his attending physician that the appendix had sloughed away, and that he would never have any more trouble of that nature. He was advised to go to bed and to abstain from all food. I was called to see him that evening and found he had carried out instructions, but was having severe pain, with the tenderness and rigidity more marked. This patient had survived the previous attacks without an operation, and naturally thought he would this time. I did not urge operative interference, as I knew there would be extensive adhesions from the former attacks, and thought it would be safer to separate them in an interval. He had severe local peritonitis, with no perceptible tumor mass, and, on the fifth day, passed a small amount of pus per rectum. His general condition was much improved on the next day, temperature normal, pulse 84, no pain, very little tenderness or rigidity.

An incision and drainage on this day would have been a life-saving measure, but again the voice of radical conservatism whispered in our ear, and again we waited. I saw him at 10 the next morning, the seventh day of the attack, and did not arrange to return, as he was hungry and

apparently in the best of condition. Two hours later I was hurriedly summoned and found him in extreme pain, his abdomen totally rigid, breathing labored, face cyanotic and pulse thready and difficult to count. He had got up on a vessel at the bedside, and felt something tear loose, as he had described it. This patient never reacted from the shock of this rupture of adhesions, but his pulse soon became imperceptible, and he died twenty-seven hours after his peritoneum was bathed in pus—pus which, no doubt, could have easily been drained through an external incision prior to the rupture.

CASE 6.—M. W., a young man of 30 years, was first seen on Aug. 10, 1905, when the following history was obtained: He had never had any severe illness prior to this, which began five days before, with vomiting, pain and tenderness over the right side of the bowels. This man had a temperature of 101° F., pulse 90, no chills or sweating, and very little nausea. There was a sausage-shaped tumor extending obliquely through the right side of the lower abdomen, smooth, hard and dull on percussion. On the following morning, under ether anesthesia, a free incision was made, and about one pint of foul pus evacuated. On account of the short duration of the attack, it was feared that the adhesions were very tender, so that no searching of the cavity was attempted. At the second dressing the gangrenous appendix came away, and the patient's convalescence was without incident until the end of the fourth week, when there was a small sinus remaining. On removing the dressing one morning I found a good-sized calculus presenting in the mouth of the sinus, which quickly healed after this was removed. It seems probable that this concretion had been forming for several years, without causing symptoms, but had finally reached a size sufficient to cause a perforation of the appendix near its base, with consequent sloughing and abscess formation. The tumor was marked in this case, while in Case No. 5 (unoperated, and ending fatally after intraperitoneal rupture of the abscess) there was no perceptible tumor. This latter fact emphasizes the point that physical signs, as well as symptoms, can not be relied on.

To recapitulate, I have given you the histories of six cases as types of those commonly encountered, so arranged in pairs as to emphasize the difference in results in similar cases, when treated expectantly, and when treated surgically. In other words, I have attempted to point out how much safer, for both patient and practitioner, is the doctrine of conservative radicalism over that of radical conservatism.

As to the actual and practical solution of all these problems, I am afraid that is a will-o'-the-wisp with which we will never come up; that when the touch of the physician shall have universally become the "tactus eruditus;" when the closed abdomen shall have become as an open book; when medicine has truly become a science, and that much-talked-of but never-to-be-expected medical millenium has arrived, then, and not till then, will the subject of appendicitis cease to be of interest to our most progressive of professions.

DISCUSSION.

Dr. Charles J. Drucek, of Chicago:—I want to report a case that is in line with the subject. Last November I saw a case of appendicitis, in which we had to deal with a localized abscess. The patient was quite septic. I operated immediately. The patient apparently recovered from the operation; the temperature went down to normal; patient went home, but did not quite regain his physical health, and very soon thereafter came down with an empyema-pyothorax. This was drained and healed up, along about last February or March. About six weeks ago he developed an abscess of the liver, from which he died. Whether this was a case of appendicitis, with a general septicemia of some slow type or not, or whether it was a coincidence of three different infections, I know not. I simply mention it as having been a very interesting case to me.

Dr. John E. Allaben, of Rockford:—I was very much interested in the paper just read. The subject is one in which we are all interested, as those of us who have had experience in this line know the great difficulty we sometimes meet in these cases. I think the profession generally are quit harmonious with regard to the question of operation, after the diagnosis has been made. The greatest difficulty undoubtedly is the matter of diagnosis. I do not believe that any surgeons, and but few general practitioners, have the hardihood to take the attitude of not recommending operation early, in a case where there is no question as to the diagnosis. But there are many cases that are obscure, as the essayist has pointed out, and one class of cases in which this obscurity exists is that of children. I had an interesting experience of this kind about a year and a half ago. I was called to see a child, two years of age, that presented symptoms much like those of grippe. The family lived in the country about six miles from my home. I saw that child for three or four days without making a diagnosis, and I was looking for appendicitis, too. But it is sometimes difficult to make a diagnosis of appendicitis in children. A child may complain of a little uneasiness; it is fretful; it may have a slight rise of temperature, and if you examine the abdomen you may find tenderness in almost any part. If you touch a child in the abdomen, it will almost always cry. After seeing the child for three or four days, and the symptoms not improving, I made up my mind that the case was one of appendicitis. I gave an anesthetic, and immediately the diagnosis was clear. There was no trouble in feeling a tumor in the right iliac fossa. The diagnosis was that of a large appendicular abscess. The child was taken to the hospital, the abscess was drained, evacuated, but no attempt was made to remove the appendix. The child made a good recovery.

In the same family, the mother had an attack a year and a half later, which I diagnosed as appendicitis, and recommended immediate operation. She was taken with vomiting, pain and tenderness over the appendix with rigid abdominal muscles, so that there was no question in my mind as to the diagnosis, but I could not obtain her consent to operate. She finally recovered from this attack, was about the house doing her work, when nine days afterwards, I was summoned to the house quickly and found her a very sick woman. She had excruciating pain in the region of the appendix and a tumor as large as a fist in the right iliac fossa. As I could not remove her to the hospital on account of her condition, I operated at the house. When the abdomen was opened, I found that the intestines had formed adhesions in such a way as to confine the pus to the appendicular region, and by using gauze packing, I prevented the pus from getting into the abdomen. When I opened the abscess there was a gush of foul-smelling pus which floated out a portion of the gangrenous appendix. I used a rubber tube drain and gauze and the patient made a good recovery.

Such cases impress upon us the necessity of early operation. We ought not to take any chances. As soon as the diagnosis of appendicitis is made we should operate provided we see the patient early in the history of the attack.

Dr. William H. Maley, of Galesburg:—I wish to put on record a recent experience I have had. Last Wednesday morning, early, I was called to attend a young man suffering intense pain in the abdomen, and I made a diagnosis of

appendicitis at once, and told him he should be operated on. His first remark was, "Nobody can stick a knife into me." However, after I told him what was the matter, he gave me a history of having had two previous attacks, and since that time he has admitted he had three. The last attack was more severe than either of the former ones. I did the best I could for the young man under the circumstances, trying to relieve the pain, keeping all foods and fluids out of the stomach. But finally, last Saturday morning, seventy-two hours after I first saw him, he consented to be operated on, and at that time the abdomen was about as tympanitic as it could be and the man live. Pulse ranged between 130 and 140; the temperature ranged between 100 and 101 F. He was vomiting. He had nothing in his stomach to vomit except that he spat up a little black stuff. There had been no gas passed through the bowels. What I want to find out is, what should a surgeon do at such a time? The man was almost in a dying condition. His face showed it. I went ahead, made a low incision, expecting to drain, and, no sooner had the peritoneum been opened, than fluid escaped. The peritoneal cavity was full of bloody fluid; the intestines popped up so fast that it was all my assistant and myself could do to keep them in the abdominal cavity. We walled off the bowels as best we could and located the pus low down in the right iliac fossa, wiped it out, put in drainage and closed the abdomen. That was last Saturday noon. The young man was still living on Tuesday and was in better condition than when he was operated on. I will admit, I was uncertain as to whether to operate at that time or not.

Dr. Channing W. Barrett, of Chicago:—I have some convictions in regard to appendicitis. If we had in every town in the state of Illinois men with the convictions of Dr. Rafferty and all the cases of appendicitis were falling into their hands primarily, there would be very few problems in appendicitis to discuss. But we have some problems in appendicitis to deal with at the present time. One of them is to get every practitioner who sees a case of appendicitis primarily to make an immediate diagnosis of it. The statement has been made that it is very difficult to make a differential diagnosis of appendicitis. It is not so difficult to make a diagnosis of appendicitis as it is to say what is going on in that appendix. A man who sees many cases of appendicitis usually readily makes a diagnosis. If it is difficult in a given case, with few exceptions, it is not because the symptoms are not present, it is because the man fails to interpret what he finds. One problem then is to get the hundreds of men that see the cases first to make an early diagnosis. The next problem is to get those people who have appendicitis, and their friends, to consent to an operation. One of the difficulties, to be sure, is the dread that is felt by nearly all of having an operation. There is a widespread fear of the anesthetic. The layman counts the abdominal incision a dangerous thing, and hopes that the condition in the abdomen will prove harmless unoperated. But a still greater cause for inactivity on the part of the patient is the failure of the whole profession to have a unanimity of mind in the matter. One insists upon operation and another says he has great success in "scattering" the inflammation. And indeed, we find the difficulty well scattered in these cases. But after all, the patients want to get well, sometimes in their own way, to be sure, but if the profession could thoroughly and unitedly decide that appendicitis is a surgical and not a procrastination disease, this problem of getting the patient's consent would be solved. People do whatever a united profession insists is right. In cases like that cited by Dr. Maley, I usually make it so emphatic that an operation is necessary that the patient submits to the operation or wants to change doctors.

If the cases of appendicitis, then, are seen and managed by men who make the diagnosis early, who have the courage of their convictions, who do not make the mistakes of waiting as mentioned by Dr. Rafferty, but recommend an early

operation, the mortality will almost completely disappear from acute appendicitis.

Dr. Bertha Van Hoosen, of Chicago:—I can sympathize with those who encounter difficulty in making a diagnosis of appendicitis in some cases, and in my judgment we have something to learn about appendicitis yet, although we may be able to find some diagnostic point that we can depend upon.

Two weeks ago I had a couple of cases to take care of within two days, so that they were particularly interesting to me. One was a nun at Joliet. I was called to see her because she did not feel well. She was unable to work. She was run down and nervous. She had never had an attack of appendicitis; she had never had any nausea; she had absolutely none of the typical symptoms of this disease. I undressed her, made a thorough examination, and so far as I could determine her pelvis was normal. She had a slightly movable kidney; likewise tenderness at McBurney's point. That was the only symptom I could find. I told her I believed she had some chronic trouble in the appendix, and when I said to the Mother Superior that possibly the Sister had appendicitis, she felt I must be mistaken, because, she said, she had never had any symptoms of appendicitis. I said she would better have an operation if she did not feel better in a short time. They decided immediately that she should have an operation for the movable kidney. I found the appendix simply buried in a mass of adhesions, requiring half an hour to separate them, and the appendix had to be dug out. When I got down to the cecum it was a mere shell requiring no ligatures, and the end filled with the largest concretion I have ever seen. She had had long-continued trouble in that appendix.

The next day a girl was brought to me from the country. She had had a very severe attack of what we thought was appendicitis a year before. This was uncertain. The patient had had, a week before, such a violent pain in her right side that everybody about her, particularly the members of the family, thought she had appendicitis. When she came to me I made an examination and found she had great rigidity on the right side. She had had every symptom of appendicitis which is mentioned in the text-books. It was a typical case. I was to decide whether she should have an operation immediately or not. I had a blood count made, and the leucocyte count was nearly 20,000. I decided that the appendix must be on the point of rupture. I found, however, she had a retroversion of the uterus, so I thought I would do a ventrofixation at the same time. I made an incision in the median line and found the abdomen contained quite a large amount of blood, perhaps half a teacupful. The appendix was perfectly normal. I removed it because the physician was anxious to have it removed. The blood came from a rupture of the Graafian follicle. The ovaries were quite cystic. I removed some of the cysts and reduced the ovary to normal size. I did a ventrofixation. We have to find some new diagnostic points we can rely on before we can advise, in every case, an immediate operation.

Dr. Charles B. Brown, of Sycamore:—When I attended a previous meeting of this society held in this city, I heard practically the same talk that I have listened to to-day. I take the same position that the essayist does in regard to these cases, and perhaps that is the reason why I see so few cases of appendicitis. The gentleman who read the paper has related cases of appendicitis, which have occurred in country practice. In the country, patients and people know you. They know your views in regard to this disease, and they do not want you. They want the other fellow, because they think you want to operate on them. If you visit some of the small towns and make inquiries you will find either the patients themselves or the physicians use antiphlogistine in cases of appendicitis. There is one man in a neighboring town, for instance, who says that he has never lost a case of appendicitis. Patients really do not know what to do. Whose fault is it? It is the fault of the medical profession and not of the people. People are not properly advised. We would not have this discussion if we did just the sort of

thing of which the essayist spoke. The time to operate upon a case of appendicitis is immediately after the diagnosis is made. If the advice to operate at once is accepted, then a large percentage of patients who now die without operation would recover. They do not die from early operation, but they die because they have been trifled with. Probably a small fraction of 1 per cent. of these patients die from the operation of election. When these patients are trifled with they will die, and we will continue to talk about appendicitis as we are doing to-day.

A professional friend of mine was called to see a case one Sunday afternoon. The next morning he pronounced the case one of appendicitis. The following morning I was called to see the patient and concurred in that diagnosis. The father said to me, "Dr. Brown, this is your patient; whatever you say goes." I operated on the boy immediately, and in ten days he was well. Some of these patients die because there is no unanimity of opinion on the part of the doctors; they cannot come to a decision as to what is the best course to pursue; consequently patients are trifled with until they die, and it is the doctor's fault that they do die.

Dr. G. W. Green, of Chicago:—I would like to call attention to the fact that syphilitics develop general peritonitis very quickly after an operation for appendicitis. They do not seem to have the power to wall off the septic process as quickly as the other class of patients. If a syphilitic patient develops appendicitis and you leave the case go for a short time, hoping the septic process will be walled off, he may develop general peritonitis very quickly. Delay is dangerous in syphilitics.

Dr. Rafferty (closing the discussion):—I appreciate this discussion of my paper, and I feel that my purpose has been partly accomplished, at least. The point made by the last speaker with reference to general peritonitis is very well taken. In young children the peritoneum has not the power of limitation that we find in adults. A child with an infected appendix is much more liable to develop rapidly increasing peritonitis than an adult. The point I want to make is that in children we do not have the power of adhesion as marked as we find it in adults. Children need to be operated on more strictly than adults; and my experience has been that they are much more liable to develop general peritonitis.

In regard to operating on the moribund patients I think every case is a law unto itself, and one should act accordingly; but in the small communities sometimes there are reasons which make differences of choice. A patient with appendicitis who has general peritonitis and is going to die you think probably would die with or without operation. If that patient wants an operation, you may save him by doing it. But, on the other hand, if he should die you are just as likely to prevent the next patient from being operated on. Very commonly that is the case. A patient may speak of somebody else who has had appendicitis, was operated on, and died, and he does not feel like undergoing an operation himself. In some communities, whenever a patient dies after an operation, he dies from it. That has made me hesitate to advise operation in apparently hopeless cases. I believe it is better to let some unpromising patients die and get to operate on those in which something can be accomplished.

In regard to the percentage of deaths and recoveries, I will say that it is estimated that from 80 to 85 per cent. of patients with appendicitis recover from the first attack, and in a certain per cent. quick operation is apparently useless. If we operate on 100 per cent. in order to save 20 per cent., we subject the 80 per cent. to a useless operation, which is, however, practically without danger, and practically there is but a mortality of 1 per cent. In other words, 80 per cent. are subjected to a useless operation for the benefit of the 20, although, of this 80, there will be subsequent attacks in a number of cases.

In discussing this subject before other societies, I have heard men make the statement that they had seen only a few cases of appendicitis. I have heard others

who said they had seen a large number of cases, say that they never had a death. I have seen quite a number of cases, and they have progressed so rapidly that they have made a strong impression on me. I put those men who have seen a large series of cases of appendicitis without a death in the same category or class as those practitioners who have attended a large number of confinements without having a laceration of the perineum.

SOME OF THE COMPLICATIONS AND EMERGENCIES IN THE SURGICAL TREATMENT OF OVARIAN CYSTOMA.*

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Of all ovarian tumors subject to radical surgical intervention, about 60 per cent. are the multiple or multilocular ovarian cyst-adenoma. In estimating this percentage, I do not consider those slighter cystic degenerations in the ovary which should receive conservative surgical treatment. The multiple cyst-adenoma is the classical tumor of the gynecologist, recognized, treated and operated upon for many years before the microscopic and pathologic character of other ovarian tumors was understood. The general consideration of the etiology, pathologic histology, differential diagnosis and anatomic relations of these tumors is of too wide a scope for consideration in this short paper. I merely wish to discuss briefly some of those more common complications and emergencies which present themselves to the surgeon in his operative procedures for their removal.

In former years these tumors usually grew to large size before resort to surgical intervention, and still, in this present day of "frenzied surgery," it is not uncommon to see them weighing many pounds. It is in these large polycystic tumors of long standing that the most serious complications meet the surgeon. The complications may be divided into those arising from the changes in the cyst itself and those occurring from changes and conditions in the abutting tissues or organs.

In the first class are (a) hemorrhages, (b) suppuration within the cyst, (c) adhesions, (d) torsion of the pedicle, (e) rupture. In the second may be considered (a) ascites, (b) intestinal obstruction or strangulation, (c) pregnancy.

(a) Hemorrhage into the cyst may happen from multifarious causes. The most frequent is torsion of the pedicle. Moderate torsion interferes with the return of the blood through the veins, while the arterial circulation is still maintained. These hemorrhages, when copious, as in acute torsion, may seriously endanger life and produce profound collapse.

(b) Suppurations within the cyst may be produced by a variety of conditions. They may result from infection through the Fallopian tube, the bladder, intestinal canal, or from appendicitis, phlebitis, etc. Formerly, a common source of infection was the process of tapping, which measure should only be used as a preparatory one to radical operation, in those

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eases where the growth has become so large as to seriously interfere with respiratory processes. These infections or suppurating conditions are so common in ovarian cystoma that, in their removal, the technic should comprise the most detailed precautions to preserve the abdominal cavity from infection. The occasional presence of fistulous openings into the hollow viscera of the abdomen, from suppurating cysts, is a condition that may at any time meet the surgeon in the removal of these growths.

(c) The most common complication, which presents emergencies of all kinds and varieties in the surgical treatment of this condition, is the existence of adhesions. When they have existed for some time, forming broad, fibrous bands of close adhesions, the task of removal becomes an exceedingly difficult, tedious and sometimes an impossible one. When the parts remain in contact, or in only slight movement, sessile adhesions are formed; where the movements are more active, the bands of adhesion are elongated, forming broad or narrow isthmi, connecting the tumors and adjacent tissues. It is in cases of extensive, firm, fibrous, sessile adhesions to abdominal viscera or tissues that some of the most perplexing questions in these operations arise. With such adhesion to the bladder, shall the surgeon persist in enucleation or leave behind a portion of its wall? Shall he enucleate from the intestinal wall, resect or leave behind a portion of the wall? In deep-seated, firm, pelvic sessile adhesions shall he be radical or conservative? I fully recognize the fact that every operator must, at the time of operating, be the judge as to how far he may go in the removal of tumors associated with these strong adhesions. There is no doubt that to the average surgeon it is much more pleasing, and he deems it much more a test of his surgical skill, to remove all of the pathology which he attacks, to restore the parts to near their normal state, but I believe that in many of these cases it will inure to the patient's welfare if he possesses himself with modesty and refrains from radical methods.

The plan pursued by Kelly of Baltimore gave me most excellent results in one of these cases, where adhesions to mesentery and intestine of considerable extent were so dense and firm that a little experiment demonstrated that it would be impossible to separate them without extensive injury to the bowel. The sac of the tumor, which was a multiple cyst, was packed with iodoform gauze after the evacuation of its purulent contents. I then followed the method of Kelly, the cyst wall was incised to the extent of about half its thickness about two centimeters from the gut all around the area of adhesions, then splitting the wall of the cyst in the line of its cleavage much after the fashion of splitting leather, thus reducing this seemingly insurmountable obstacle to further successful enucleation of the cyst to the very minor danger of leaving a portion of uncontaminated cyst wall in the peritoneal cavity, which in no way interrupted the recovery of the patient. Where this method is not feasible, the leaving behind of portions of the contaminated cyst wall with proper drainage is certainly more conducive to successful results than protracted effort at enucleation, which, even if successful as far as tissues are concerned, so often carries the patient to such a point of exhaustion that she never rallies from the shock.

It would seem perhaps supererogatory, in this body of intelligent medical men, to speak of the need of caution in making the incision of the abdominal wall in these cases. But as I have seen one of the most eminent surgeons and expert operators of this country cut into the bladder in making the abdominal incision for the removal of an ovarian cyst, it would seem that without due care any of us might meet with accidents. Adhesions of the cyst to the bladder may drag it up extra-peritoneally, almost as high as the umbilicus; such being the condition in the case to which I have referred, the bladder being pulled up extra-peritoneal to within an inch of the umbilicus. Another condition which renders necessary careful incision of the abdominal wall is the presence of loops of small intestine confined by adhesions of the anterior parieties under the line of incision. In the case of a young girl of 15, from whom I removed, last June, a multiple cyst adenoma weighing thirty-five pounds, I found, directly under the incision, numerous loops of the ileum tightly adherent to the parietal peritoneum, entirely empty and flat, and so nearly the color of the very attenuated peritoneum that I barely escaped cutting into the lumen of the bowel. A rapid incision such as I have frequently seen made by surgeons would almost certainly have wounded the intestine.

(d) Torsion of the pedicle occurs in about 10 per cent. of these cases. It is induced by a variety of causes. The rotation varies from a half circle to as many as ten or twelve complete twists. The veins are the first to suffer from rotation, causing acute enlargement of the cyst from extravasated blood. These hemorrhages may be so extensive as to produce death from syncope. Where the torsion is so much as to interfere with the arterial supply, there is necrosis followed by decomposition and putrefaction. The rupture of an ectopic pregnancy may give rise to symptoms which might be mistaken for torsion. Happily, the means for relief are the same in either emergency.

(e) Rupture of the cyst is generally sudden, though occasionally it is gradual from change in the cyst wall. In multilocular cysts especially, rupture of the cyst is often followed by infection and a rapidly following peritonitis. In papillomatous cystoma, rupture results in the formation of growths upon the peritoneum, sometimes studding almost its entire surface.

As to the complications due to the changes in the abutting tissues, ascites is the most common. This is seldom present, though, to any large extent, as long as the tumor maintains a benign character. Whenever it is extensive, the probabilities are that malignant degeneration is going on. Of course, I am referring here to a true ascites and not an accumulation of fluid in the abdomen from ruptured cyst walls.

Intestinal obstruction or strangulation may occur from pressure of the cyst upon its walls; this may have proceeded to such an extent as to require resection of the afflicted gut. Occasionally, volvulus is produced by the collapse of a ruptured cyst, to which an adherent loop of intestine is attached.

Pregnancy, occurring in connection with ovarian cystoma, is a grave complication. Ovarian cystoma are frequently successfully removed

without interrupting the normal progress of pregnancy, but, unless urgent indications to the contrary exist, surgical intervention is postponed until the termination of the puerperal period. The possibility of adhesion of the cyst with the liver is an argument in favor of operating during pregnancy, where the diagnosis of a multiple cyst is made. A number of cases have been reported where the gravid uterus has lifted an ovarian cystoma, so that they formed serious adhesions with the inferior border of the liver. After labor, the adhesions prevented the descent of the cyst as uterine involution proceeded and the consequent tugging brought about their rupture or extensive hemorrhage.

Showing the possibilities of such complications as these occurring through the dislocation of cystoma from being pushed out of their ordinary location by an enlarging uterus, with consequent adhesions to distant organs, I wish to report the following two cases:

CASE 1.—Mrs. M., aged 43, housewife, living on a farm. Married at 27. Mother of three children. Last labor seven years since. About four years ago noticed enlargement of abdomen, which has since steadily increased. Two years ago began to have menorrhagia, which has continued with varying severity to the present time. About three months ago was attacked by severe pain in right hypochondriac region, from which she was obliged to remain in bed for several days. Since then has had constant feeling of weight, dull pain and dragging sensation about the region of the liver. Physical examination revealed an abdomen enlarged to about the size of full-term pregnancy. By means of palpation, two distinct tumors could be distinguished, and a diagnosis of uterine fibroma with probably ovarian cystoma was made. Operation was done in patient's home, a better class farm house. Upon opening the abdomen, a large uterine fibroma was found, extending as high as the umbilicus, but the fundus pushed partly to the left by the lower border of multiple cyst of the right ovary, which had been pushed far up into the right upper abdomen, and was attached by a long, broad pedicle. Extensive adhesions were found everywhere, most of them friable and easily enucleated.

In exploring the cystic tumor, adhesions to the parietes and intestines were easily loosened until its apex was reached, which was found to be under the border of the liver and attached by such firm adhesions that I feared to attempt their enucleation. I, therefore, made a cross-section of the abdominal wall, and, after packing the abdomen with large gauze sponges, emptied the cyst by trocar, and, after incising and packing it with iodoform gauze, I then cut through about half the thickness of the cyst wall around the area of adhesion, peeling off the remainder of the wall, and leaving attached to the liver a portion of the wall which I hoped was free from infection. In closing this part of the wound, a cigarette drain was introduced, which was removed on the third day, after which there was rapid closure of the wound. The fibroma was removed by hysteromyomectomy with very little trouble.

CASE 2.—Miss T., aged 48, housekeeper. Menorrhagia for six months, enlarged abdomen, uterine tumor, tumor in right hypochondriac, which had been diagnosed as enlarged gall bladder. A few days before seen by

myself had an attack of severe pain in right iliac region, with tenderness, fever and vomiting, which the attending physician had diagnosed as appendicitis. Examination revealed a large uterine fibroma, with a second tumor above and to the right of the uterus, on the outer aspect of which was a smaller tumor, very sensitive to the touch. Laparotomy was done immediately, when there was found uterine fibroma extending almost to the umbilicus, with a unilocular cyst of the right ovary pushed up to the border of the liver. This was found free from adhesions, except upon its outer lower border, where on pressing the hand around the tumor it was found rather tightly adherent to a bunch of intestines, from which, after careful manipulation, it was found and extirpated. Upon examining the intestinal mass from which it had been freed, it was found to consist of a cecum, a portion of the ileum and colon, and enveloped in them a much enlarged and partly necrotic appendix. The appendix was amputated, the stump invaginated and covered with Lembert sutures. Hystero-myomectomy was done, the abdominal wound closed. The patient convalesced beautifully, her temperature never rising above 99 degrees F. subsequent to the operation, and she was sent from the hospital to her home at the end of two weeks. The ovarian cyst was extirpated without rupture, was as large as an adult head and weighed seven pounds.

DISCUSSION.

Dr. Thomas J. Watkins, of Chicago:—This is such an important subject that this paper ought not to go by without discussion. The essayist spoke of leaving some of the cyst wall. Simply splitting it is much better than attempting a difficult enucleation. There is very little danger of leaving a portion of the cyst wall, which is very much adherent, in cases where we are not able to split it, and remove a part of the membrane. A large portion of the cyst wall can be removed without any bad ultimate results. It will simply result in becoming cystic, the secretion continuing and having a small cyst form. I would disagree with the essayist in using drainage in a case like that unless we were sure the case was septic, because if we use drainage the part of the cyst wall that is left is almost sure to suppurate and leave a sinus for a considerable time. Without drainage, if the case is not septic, there is no danger of suppuration.

A study of these cyst cases brings out some important points in intraperitoneal pathology, and one is the gangrene which results from torsion of the pedicle. When gangrene results we know that bacteria are present. If there are no bacteria we get no gangrene. In an ovarian cyst, if the pedicle becomes tainted, does not come in contact with bacteria, we will simply get atrophy, and not gangrene. In most of these cases the only possible route of infection is through the intestinal wall; and modern researches have shown that bacteria in normal cases pass through the normal intestinal wall, and these cases of gangrene can only be explained by the bacteria which migrate through the intestinal wall, and when a cyst becomes twisted, it easily becomes infected.

Dr. Channing W. Barrett, of Chicago:—Ovarian cystomata are always interesting from the standpoint of the history. It is through these tumors that gynecology and abdominal surgery had their development. But it is not from this standpoint that the general practitioner is interested, but from the practical standpoint of dealing with the cases. I wish to say a word or two in regard to ovarian cystomata complicating pregnancy. All of the complications of the cystomata are intensified by the onset of pregnancy. The pedicle is more liable to be twisted, hemorrhage is more liable to occur, pressure upon important organs is more apt to take place, including pressure upon the ureters and kidney. The time was when these cases of cystomata, no matter what size, at the onset of

pregnancy were allowed to take their course until something occurred. If complications arose or abortion threatened, the uterus was emptied.

I wish to call attention to the fact that the pregnant woman is not so immune to operation now as she was at one time. Even operations upon the uterus and tubes are done with perfect success. Ovarian cystomata should be removed immediately upon the onset of pregnancy; instead of pregnancy being a bar to operation it offers another argument in favor of an operation, of not allowing the ease to run on until complications set in, or until the pedicle becomes twisted, or hemorrhage occurs. But immediately, on the onset of pregnancy, or at any time when such condition is found, the woman should have an operation for the removal of the cystoma.

Dr. Eyster (closing the discussion):—I think Dr. Watkins, in the remarks he made, is absolutely right; that drainage is unnecessary unless there is infection, but I think where one feels there is marked danger of infection in leaving an infected cyst wall, it is well to prepare for that by drainage.

As to operating for the removal of ovarian cystomata during pregnancy, I agree with Dr. Barrett to a certain extent, but I believe the cases should be selected, and those which can be safely left should not be interfered with. Those cases in which there is a fair probability that there will be dangerous complications from allowing them to proceed until the termination of pregnancy should have surgical intervention.

THE NUTRITIONAL BACKGROUND OF ADOLESCENCE.*

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One of the most promising and valuable fields of collateral research, in which medicine shares in its advancement, is that of psychology. Not that the new psychology, in all of its essentials, marks a signal advancement over the old (for it is a fact that human nature is much the same as it was since it began to think of itself), but that, while thought is essentially the same, the mode of its presentation, patiently worked out in new ways, appears, and is, more in line with the scientific trend of the age. It aims to dispense with the useless, confusing and obscure verbiage and places mind, in the study of its nature and functions, where it rightly belongs, as life, dependent upon an organic basis, capable of growth and of development, of dissolution and of decay. Further, the new psychology aims to demonstrate that mind, in its life, demands the co-ordinated normal functioning of bodily organs as a whole and the particular balance of the "exquisitely fine networks of the nervous system, which are indispensable conditions of its earthly being, which grow in number and complexity with its growth and on the integrity of which its functions depends" (Maudsley). In simple words, we bring psychology down from the abstract heights of the metaphysician to the organic basis of the new psychology, and in doing so interpret mental functions in terms of physical organization, bespeaking, therefore, a very material origin of mind, imbued with sense experience, physical perceptions and dependent upon

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the human body as an organic mechanism, which, charged by nutrition, discharges itself into functions so long as it is alive.

"Production, preservation, destruction is the inexorable cycle of life, be it mollusk or man, matter or mind," says Maudsley, "and we who view the mind in disease or the body in disease recognize this cycle and know that when vital force signally fails to rise to the height of its mission, or else is perverted and ceases to perform its mission properly, then the result is innate weaknesses which fall below the normal level of average human experience, showing that there is back of all a nutritional factor in subtilities of life. There are powers within us, diverse in their reactions and dependent upon a potential, innate, constant and measured force; to some, this vital force reaches its fulness in childhood, then this native complexity of conditions has reached its maturity, and now mind, like the spent ball of the rifle when its propelling force has ceased, falls to earth and ceases to respond in its normal activity. In others, it is during adolescence that collapse occurs, and then under very similar conditions; in many cases showing that the complexity of mind has an inherent potential dependent upon organic antecedents, which we can trace step by step and largely through nutritional changes."

Even the mild perversions, physical as well as psychical, have a nutritional basis, and it is of this nutritional background of adolescence that I wish to speak, and more especially with reference to the psychic phase of the subject. It is in this field that psychology is creating the opportunity for a wider diffusion of useful and practical knowledge, serviceable in the every-day practice of the physician and useful in the brilliant promise it offers us in formulating sensible ideas regarding youth and its disorders, physiologic and pedagogic.

There is developing out of the mass of data supplied us by the psychologists, notably the work of Dr. G. Stanley Hall, a new specialty in medicine, the diseases of adolescence. It is right that this specialty should develop, for the time is now opportune for just such special work. It was but comparatively a few years ago when diseases of children were not known with that clearness which now characterizes the specialty of pediatrics, and now youth, in its physiologic and psychologic variations, is going through the evolutionary period of its development into a special field of research and clinical study. The study of diagnosis during this period makes us cognizant of the fact, as Taylor says, that adolescence is a period when young people have not entirely escaped liability from many of the disorders of infancy and childhood and when many diseases of maturity have not yet acquired full strength, so that the individuals are then peculiarly prone to slight ailments, although the mortality rates are low.

Again I would say most of these slight ailments are nutritional and are, unfortunately, overlooked or are masked by other features which should caution us never to ignore the slight nutritional ailments of an adolescent, because they are warnings, signs of the approach of a formidable foe, which may leave a path of sorrow, disaster and woe in its train. These slight ailments may be all sufficient to arrest or pervert nutrition, just at this crucial period, and to throw the balance on the wrong side.

Normal equilibrium in health is dependent upon nervous stability,

implying complete development of the nervous system and integrity of its structural elements. In the abnormal, even so slight as to require painstaking inquiry to determine impairment, these well-known embryonal nutritional conditions, in their genetic potential, may go so far out of the way in development as to impair the growth and even the birth of the higher faculties of mind. Hence, the importance of a knowledge of the genetic psychology, the genetic idea which, as Baldwin says, "implies a growing, developing activity and this may be involuntary or evolutionary, according as the egoistic or the racial potentials or motives are good or bad." This suggests to us that inheritance, the racial or family potential, is a genetic factor in this nutritional problem before us, and also suggests that this factor, with its accumulated storage of energy, is little understood or fully recognized, in its power to make or break, by its destiny, the career of the individual.

It is of the greatest importance, therefore, that we consider all of the facts which, singly or collectively, have a nutritional bearing upon the individual during this plastic age. We must know more of family history, wherein will be found the genetic factor; we must know more of environment that we may know how to attune it to the individual, rather than the individual to the environment; we must know the individual with his characteristics and his tendencies that we may suggest reinforcements, here and there, that will strengthen character foundation, thus contributing that very important educational training so important to the adolescent just at this crucial period when the higher faculties are born and molded. Our problem, the nutritional background, then, really resolves itself into three considerations, a tripod, as it were, upon which success rests. The three legs support it, but the failure of any one leg precipitates the whole and failure results. The legs of this tripod are the three factors, viz.: the physical, the environmental and the educational.

Physical Factor.—The physical includes the great subject of bodily health, including the mind, which is a part of our physical being, and indicates bodily disease when deranged. It is unfortunate that many of our capable practitioners regard the youth in his physical development, in his departure from health, and especially in his varied nervous and mental disturbances, rather as an adult, only differing in proportioned weight and age, not considering the developmental processes incidental to this age, with all of their modifying influences. The study which Dr. G. Stanley Hall has made of adolescence is the most complete and classic study of this period ever made and fills in that "remarkable gap in the literature and knowledge concerning health and disease during adolescence." He has clearly shown that most of the ailments of this period are due to disproportionate development, emphasizing the observations of Raux that different organs and tissues or determinants compete for the available nutritive materials in the blood, and that some, for a time, get ahead of others in this internal struggle for survival among the different parts or independently growth units. If functions or tissues that ought to develop at the age of 20 appear at 15, or earlier, we have

here on a small scale what, if excessive, constitutes, from an evolutionary point of view, the precocious which is an abnormality and which may do harm because each determinant should get its full share of growth energy so that height be not at the expense of weight or the nervous system at the expense of the body or *vice versa*.

This subject has been admirably worked out by Hertel and others and it is important that physicians know of and study the individual needs of the adolescent cases under his care. It is true that if the needs of the body are known, much can be done in shaping the career of the patient, aiding in his mental development and regulating the complex physical needs. Hall says: "The more we know of the body the more clearly we see that not only growth but every function has a trophic background; that through all the bookkeeping of income and expenditure every organ is, in a sense, a digestive organ; that the body is a machine for the conservation, distribution and transmission of energy, and that man is, physically considered, what he eats and what he does with it or, better, what he completely digests." "From the standpoint of the higher metabolism, every cell and tissue has its own specific hunger, and what we call appetite is a symphony of many parts, or a net algebraic result aggregated from the specified hunger of all the tissues and cells."

Hall further says: "In a sense every disease is due to cell hunger, and old age and death are progressive starvation." "To feed well causes lower organisms to pass rapidly and surely over the stages of growth, while insufficient nourishment causes arrest, whether in larva or child. A well-balanced dietary is especially necessary at adolescence, when the range of appetite normally enlarges. Bad eating habits, either in quality or quantity, are at the bottom of most breakdowns in student life and are among the chief causes of intemperance. Probably no period and no condition of life suffers reduced vitality and efficiency from errors in diet so much as brain working and sedentary youth, despite the fact that none better can sustain such errors, so far as life and tolerable health are concerned."

The question, then, of proper food and proper habits of eating are of great importance, and my experience in dealing with adolescents, many of whom are, or have been, college students, is that many, especially girls, accustom themselves to a minimum of food, an insufficient supply at that, and thus pave the way for decided faulty nutritional conditions. Sooner or later a collapse follows and, to the teacher or parent, it comes as a thunderbolt out of a clear sky; and yet to the experienced physician it is but a climax to conditions which have been existing for months.

In a previous paper on "Bodily Weight as a Factor in Prognosis in Nervous and Mental Diseases," I said, in speaking of the signs indicating mental change: "To me, one of these is nutritional change. It may appear as a whimsical appetite which is hampered by indulgent relatives and friends, and may sooner or later domineer the household and lead to the establishment of faulty habits, unwise routine and revolutionary conditions. To meet the demands of such a case we must remember that the

underlying principles of treatment are unquestionably isolation, rest, nutritional development and the wholesome suggestion, as expressed by Maudsley, 'of keeping in view before the patient and unconsciously ingrafting in him the silent conviction that he is not distinct from his kind and extinguishing the desire to be particular and to distinguish himself from them.'"

Chittenden, in his recent studies, reported with scientific accuracy and reliability, in his most excellent treatise on "Physiological Economy in Nutrition," has shown that there is no subject of greater physiologic importance or greater moment for the welfare of the human race than nutrition. That the physical condition of the body exercises an all-powerful influence upon the mental state and that a man's moral nature even is influenced by his bodily condition are equally certain; hence, the subject of nutrition, when once it is fully understood and its precepts obeyed, bids fair to exert a beneficial influence not only upon bodily conditions, but likewise on the welfare of mankind in many directions. Chittenden makes a plea for simple living. Really remarkable are the results of his experiments, especially as regards the amount of proteid diet necessary to maintain health and full bodily efficiency. The physiologic economy, as taught by him, is not a fad nor a fancy, but a strictly scientific proposition that is full of suggestion for the betterment of health. We should study these results and urge the application of his suggestion in the nutritional problem of the adolescent, thus bettering the physical condition of the body, improving physical strength, giving greater freedom from fatigue and imparting a condition of well-being that is full of suggestion for the betterment of health.

Environment.—The second leg of our tripod is environment, of which I will speak briefly, and then only to urge the observation of self-evident rules of living, which lead to a wholesome life of usefulness. My experience has been that, unfortunately, most adolescents who have come under my care have been living in an environment not wholesome and under conditions which make me feel that the climax which has brought them to me is not accidental, not even spontaneous nor a freak condition outside of mental laws, but is rather the result of faulty living, with a not infrequent genetic foundation, uncorrected by rational training and right living. This is evident in that rather hard-to-describe but nevertheless apparent marking of the individual; that condensation of force in delicate cerebral mechanism, which shows itself in that process of humanization which the face delineates and the conduct belies. In some the constant power of the quiet reserve of good breeding is marked and in these the faulty living has been, through over pressure, over fatigue or a delicately constructed nervous mechanism, easily thrown out of gear by too much pressure. In others the tumultuous agitation of the vulgar, the uncouth, the unrestrained and the selfish is shown through the play of the facial delineations, sustained by that great criterion of mental perversion, conduct. All differences of individual character reach down to the organic depths of mind; the native differences of organic sensibility with their accompanying differences of reaction necessarily build up dif-

fering reflex mechanisms, that is to say, differing modes of feeling, thought, judgment and conduct. We who see cases of mental disorder eventually draw our own inferences as to the real and apparent factors in causation. Environment, I am sure, reacts upon the organic depths of mind, its seat, in fact, and it is, either directly or indirectly, a great factor in nutritional conditions. I do not believe that it is possible for a youth, especially a girl, with genetic tendencies, to live in an environment of moods, gloom and despondency, without showing a failure of nutrition and a belated development into womanhood. I have repeatedly found that such patients present a history of delayed menses, several not having menstruated until 18 or 20 years of age; others show infantile pelvic organs; others show disproportionate development in other ways and marked mental peculiarities, such as timidity, loss of self-confidence and the very unfortunate disposition of being moody and dissatisfied with their lot. I think that it is cruel, too, for a young girl to live in such an environment, and ere it is too late it is advisable to transplant this budding woman into more wholesome and suitable surroundings. Just here is where our modern woman's college, with its attention to the physical as well as mental needs of the young woman, is making for itself a valuable place in social and racial development.

The Educational Factor.—It is everything to the adolescent to know the right way toward development, and despite the habits of poets and of many others, as Hamilton Mabie reminds us, youth is not always a period of unshadowed gaiety and pleasure, with no consciousness of responsibility and no sense of care. Mabie, in his thoughtful, analytical essay on the "Pain of Youth," says: "Youth symbolizes the immortal part of man's nature and must be, therefore, always beautiful and sacred to him. But it is untrue that the sky of youth has no clouds and the spirit of youth no cares. On the contrary, no period of life is, in many ways, more painful. The finer the organization and the greater the ability the more difficult and trying the experiences through which the youth passes. The young man is an undeveloped power; he is largely ignorant of his own capacity, often without inward guidance toward his vocation; he is unadjusted to the society in which he must find a place for himself. Youth is possibility; that is its charm, its joy and its power; but it has also its limitations. There lies before it the real crisis through which every man of parts and power must pass; the development of the inward force and the adjustment of the personality to the order of life."

It is just here where many of the mistakes in life are made, in the adjustment of the personality to the order of life, both in the young man and the young woman. Not knowing their limitations; not knowing their capabilities and beset by physical and environmental conditions, the effects of which are not fully realized, they too often drift aimlessly into the realities of experience, unprepared to meet the demands made upon them, and as a result many are compelled to search hard in their endeavor to find their place in the general order of life's routine. Even in the most harmonious natures, the elements of agitation and ferment are rarely ab-

sent. These are inevitable in experience, and if properly circumscribed and properly directed good may result. Mabie says: "In youth that which is to be feared is not the explosive force of vitality, but its wrong direction; and it is at this crisis that youth so often makes its mute and unavailing appeal to maturity."

Here is where the educational factor serves to conserve energies, cultivate patience and fidelity and strengthen the possibilities of latent power and nobility of character. Self-knowledge, too frequently, is faulty knowledge obtained in isolated, misdirected effort. The fates and fortunes of existence can not be eluded, but they can be made serviceable in our development by the interaction between organism and circumstances which, while circumscribed by individual organization and seemingly inexorably fixed, yet can through education be made to serve the grand and useful purpose of bringing order out of chaos and success out of the fate which the youth's own organization makes for him.

The evil effects of unbalanced culture, especially with girls, is receiving great attention now from the leaders in education and medicine, especially from the broad cultured gynecologists of the type of Playfair, Polk, Dickinson, Dudley and others, who recognize that education means more than the perfunctory methods of the old style, fashionable boarding school and who recognize that the adolescent woman needs an all-around, wholesome training. Playfair (*Allbutt's Practice of Medicine*, Vol. ix) speaks of this modern, wholesome type of young womanhood, which is doing so much in the betterment of social, racial life, in the following words quoted from the "Speaker" and entitled the "Lawn Tennis Girl": "Sensible people have long ago agreed to accept this new type of womanhood as being distinctly admirable. She has made her influence felt everywhere, both in real life and in fiction. In real life we meet her in every country house, in every foreign hotel and in every London square. And wherever we meet her we come upon an excellent example of healthy, well-developed and unsentimental girl, the girl who does not think it necessary to devote herself to the study of her own emotions and who finds in active physical exercise an antidote to morbid fancies which are too apt to creep into the mind of the idle and self-indulgent."

The same may be said regarding the athletic youth of our day and generation who finds in the ball field, the football contest, track athletics, golf, etc., the necessary safety valve for surplus energy in the wholesome contest which cultivates physical powers, develops mental alacrity and the spirit of give and take, which is a very necessary wholesome lesson to many adolescents. Much more could be said along this line of thought, but sufficient has been said to emphasize the fact that educational means and methods can turn out young men and maidens of this type and thus contribute to a lessening of the number of neurotic, under-developed and physically defective individuals. Such ways and means are doing more for the coming race of mankind than the medical profession can possibly do by the exercise of its own art.

ARTHRITIS DEFORMANS.*

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The name of arthritis deformans is frequently applied to three different and distinct conditions, namely: 1, Hypertrophic arthritis, or true arthritis deformans; 2, atrophic arthritis, or rheumatoid arthritis; 3, Heberden's nodes. True arthritis deformans is a chronic disease of the joints, characterized by destructive changes in the joint surfaces, pain, deformity and impairment of mobility. The various theories of the cause of this disease will not be discussed in this paper, except so far as to state that, in the writer's opinion, the evidence seems to point to some form of chronic autointoxication, probably of intestinal origin, as the exciting factor. The distinctive pathologic lesion is a softening of the smooth cartilage covering the ends of the bones. This softened cartilage is gradually eroded and worn away by the friction and pressure of the joint movements, and the loosened cartilage cells are piled up at the edges of the joint, beyond the area of motion. Here they become adherent, and form irregular lumps and masses which gradually grow larger and harder. It is probable that periosteal irritation causes new bone cells to develop, which add to the extent and solidity of the masses. As time goes on they intrude more and more upon the working area of the joint and reduce the range of motion until a practical ankylosis results. There is never a complete bone-to-bone ankylosis, however, although motion may be absent. The ends of the bones themselves become eburnated, flattened and broadened and sometimes greatly distorted. The capsule thickens, and the synovial folds become fringed with villous proliferations. Some of these may break off and form loose bodies in the joint. There may be free fluid in the joint, but usually it is absent, and the resulting lack of lubrication is one of the chief factors of destruction. Indeed, it is more than possible that a primary dryness of the articulation may be the underlying cause of many of the phenomena heretofore attributed to this group of diseases.

Arthritis deformans usually begins in one of the larger joints, especially the knee, the symptoms being at first merely slight pain and stiffness, most marked in the morning or after resting, and disappearing when the joint is "limbered up" by active use and motion. Little by little the trouble grows more severe and persistent, and some of the other joints may become involved. A slow but steady enlargement of the joint occurs, and a peculiar grating or crepitus is noticed on motion. The limb loses strength and the muscles atrophy. If the process be confined to the head of the femur, as in the so-called "*malum coxæ senile*," the leg may be shortened by the erosion of the head, and severe deformity will result. If the spine be attacked, stiffness and practically complete ankylosis may be caused by the rough plaques of bone which grow down over the verte-

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bral articulations. This is the form of arthritis deformans commonly called spondylitis deformans, or Bechterew's disease (spondylose rhizomelique). Some authors consider it a distinct disease. The general tendency of arthritis deformans is to grow progressively worse, but it may become arrested at any stage. The pain is not very severe and may disappear entirely in time. The whole picture of this disease is more like the neuropathic joint affections occurring in locomotor ataxia and syringomyelia, except that in arthritis deformans the motor and sensory nerve reflexes are normal, and pain is present, while in tabes and gliomatosis pain is absent and the reflexes are abnormal. Tuberculosis must sometimes be ruled out, and a few authors believe that some of the chronic rheumatoid conditions are of tuberculous origin. Tuberculosis is, as a rule, more rapid in its course and joint motion is limited by reflex muscular spasm and not by masses of hard tissue. Tuberculous joints do not give a grating sensation on motion, and they are apt to result in cold abscess formation. They occur most frequently in children (85 per cent.), while arthritis deformans is usually seen in older people.

Atrophic arthritis, or rheumatoid arthritis, is the disease which is most likely to be confused with arthritis deformans (hypertrophic arthritis). It must be differentiated carefully, because the treatment is entirely different. It is a disease of any period of life. It seems much like a general systemic infection, because it is apt to start in several joints at once, especially the hands or feet, and is accompanied by severe pain, fever and constitutional symptoms in many instances. In fact, the signs are not infrequently indistinguishable from a subacute generalized gonococcal arthritis. One form, known as Still's disease, is characterized by enlargement of the spleen and lymphatic glands, in addition to the joint symptoms. In the ordinary course of events, the joints become swollen and the mobility is impaired, but the swelling is due to thickening of the capsule, and not to cartilage and bone masses at the edge of the joints. Permanent flexion deformities develop, and may result in a practical ankylosis. The fingers are drawn to the ulnar side of the hand and are flexed at the proximal phalanges.

The distinguishing pathologic feature is an actual atrophy of the bone and joint structure, as shown by the *x*-ray, with no enlargement or distortion of the ends of the bones such as is seen in arthritis deformans. The joint seems swollen, but this is due to a fibrous thickening of the capsule and to the development of synovial fringes and villi. As the synovial fluid is apt to be diminished or entirely absent, a creaking or grating is caused by the friction of the dry fringes and joint surfaces. This grating can not in itself be distinguished from that of arthritis deformans. The articular cartilage is not destroyed, and bony ankylosis is never seen. The restriction of motion is chiefly caused by the contraction of the thickened and fibrous capsule, which shuts down upon the joint. The fringes and hypertrophied capsular folds tend to fill up and distend the rigid capsule and help in the immobilization. In this disease the history and course are so different from those of arthritis deformans that the diagnosis is usually easy. The *x*-ray affords invaluable aid in case of difficulty.

The treatment of these two conditions is radically different, except in the matter of diet, which, in either case, should be abundant and nutritious. Plenty of wholesome food, with a large percentage of fat, must be given, butter, cream, pork, bacon and olive oil, cod-liver oil or cotton-seed oil. Red meats are just as good as white meats. A large amount of water, preferably alkaline or neutral, is necessary, the amount being of far more importance than the special kind. Careful attention to the bowels is imperative, and a reliable fluid extract of cascara should be given three times a day for long periods of time. No aromatic or pleasant tasting forms of the drug compare with the simple fluid extract. The foregoing treatment applies to both diseases under consideration. Now, since in arthritis deformans there is an actual destruction of the articular cartilage and bone, it is evident that motion is harmful, as it tends to wear away the softened and degenerated cartilage. Motion, therefore, must be prevented by splints or apparatus. If the joints of the hip, knee or ankle be affected, weight-bearing should be prevented by some form of splint, such as the Thomas knee-splint or the Taylor hip-splint, which transfers the weight of the body from the leg to the pelvis. The tuberosity of the ischium is thus made to support the patient's weight, and he can walk fairly well without any danger to the articulations. Protection of this kind often results in a rapid arrest of the disease, with good function and mobility. It is, however, used far too rarely, but the results are most satisfactory even from the first few days, for a helplessly bedridden patient may be walking in comfort almost as soon as the splint is applied. Besides this mechanical treatment, if the joint be one of the dry variety, where the synovial fluid is nearly or entirely absent, the injection of sterile vaselin into the joint cavity may give brilliant results, as shown by the many cases reported by Buedinger. Counter-irritation by blisters or the actual cautery relieves the pain in some of those instances where it is a marked symptom. Open operation with removal of the fringes and the hypertrophied masses has succeeded in curing a few patients, and is especially indicated when the hypertrophy is excessive.

For the atrophic, or rheumatoid, arthritis, since there is no actual destruction of joint cartilage, active measures should be employed to prevent the stiffness and contractions from becoming permanent. Massage, passive motions, forcible bending and active use must be practiced, and every effort devoted to mobilizing the joints. Vaseline injections will give good results, as in arthritis deformans, if the joint be dry. Where an undue amount of fluid is present, aspiration, followed by the injection of 1 per cent. iodine solution, is the rational treatment. Acting on the theory of an infectious origin, Brackett and others have given hypodermic injections of antistreptococcus serum, with good results in certain cases. If the hypertrophy of the villi and synovial folds is extreme, their removal from the larger joints can be done by open operation, as in arthritis deformans, and they do not tend to return. For the old contracted joints with severe deformity, forcible correction under anesthesia should be attempted, and the correction can be made by degrees, at inter-

vals of several weeks, if the full straightening is impossible at one sitting.

It can easily be seen that I am an advocate of active and radical treatment in these appalling diseases. Too often we see unfortunate sufferers who have been treated with medicines, no attempt being made to prevent the deformities. It is far easier to prevent a deformity than to cure one.

A word, in closing, about Heberden's nodes. These small, hard lumps, usually upon the sides of the distal phalanges of the fingers, are apparently a separate clinical entity. They should be distinguished from the enlargement of the base of the phalanges which occurs in atrophic arthritis and which is due to synovial thickening. As described by Heberden, they are sharply defined, conoidal eminences, and the patients who have them rarely have any other joint symptoms. They are not, as has been asserted by many authors, a symptom of either rheumatoid arthritis or arthritis deformans.

100 State Street.

THE SUBJECTIVE SYMPTOMS OF EYE-STRAIN AND THEIR EFFECT UPON THE PUPILS' WORK.*

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Eye-strain may be considered as that group of symptoms resulting from errors of refraction, abnormal balance of ocular muscles and fatigue, or exhaustion, of the nerve elements used in vision. These symptoms include pain in and about the eyes and headache, varying in its locality and occurring at certain periods of time and oftentimes having a definite relation to occupation. The headache resulting from eye-strain has been estimated at 40 per cent. of all forms of headache. This includes mixed cases, or those, in part, resulting from other causes. As a rule, though not always, headache of ocular origin is accompanied by pain in the eyes and more or less inability to use them with comfort. The letters run together, or mix up, when attempting to read, the lids smart or burn and the sclera may appear reddened. Eye-strain may be made manifest by pain in the eyes or back of them, and is usually of a dull or heavy variety, and is often referred to as neuralgia. It may begin in the frontal or temporal region and gradually extend over the head, with some particular area in which the pain is acute. It is more apt to appear after excessive use of the eyes for a considerable period. The eye may be especially sensitive to light on awakening. The results of eye-strain are especially apt to be present after an exhaustive process, disordered menstruation, marked fatigue or anxiety.

Another important symptom of eye-strain is oftentimes the inability to see quickly, and as a result a slow mental process is observed. This, in young children, hinders their proper development and oftentimes changes their character and entire life.

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Fatigue and exhaustion of the nerve elements, used in vision, are responsible for not only the local symptoms, hyperesthesia, anesthesia and paresthesia of the retina, but also for more remote symptoms, as various neuroses and psychosis, about which, however, our knowledge is less exact. Among the more remote, or reflex symptoms, may be included anorexia, dyspepsia, nausea, vomiting, choreiform attacks, some forms of migraine, insomnia and nightmare. There is a direct relation between the general and neurotic temperament of the patient and the severity of the symptoms. Very small errors of refraction may cause much trouble in a neurotic individual.

To assist in determining the various conditions present and symptoms referable to the eyes, I have taken, at random, one hundred case records from my practice. The ages of these students varied from 5 to 20 years, and they attended all varieties of schools, from the district school in the country to those having the regular courses at college. The cards were not selected with any idea, except that the patient should be attending school and under 21 years of age. Sixty-two were girls and thirty-eight were boys. Twenty out of the hundred came especially for treatment of accidents and inflammatory disorders. Vision, using both eyes, was found to be normal in forty-seven, to which fact I wish to call your attention especially, as I find many physicians, as well as patients, consider that the ability to see well is an evidence of the absence of eye-strain.

Headache was present in twenty-six patients, without their complaining of the eyes paining. In twenty-six patients, also, pain was observed to be present in the eyes, without reference to the question of headache. In twenty-four, complaint was made of both headache and eye pain. The headaches were mostly frontal, next in frequency was pain in the temple. In some, headache was present at the vertex, in others at the occiput, and, in a few, general headache was complained of. Pain in the eyes and head is apt to develop within a short time after beginning to use the eyes for close work, though sometimes it will occur in the morning after over-taxing the eyes the night before.

One patient tells me that, after numerous tests, he has learned that headache always develops if he does not put on his glasses within three or four minutes after opening his eyes in the morning. I can not say just how many of these patients were relieved of headache from wearing lenses to correct the eye-strain, but I am certain, from the history in those I did see subsequently, and from the tendency to return if failure to get relief was observed, that a large percentage were relieved of their headaches and were enabled to continue the use of their eyes with comfort.

In thirty-five there was lack of balance or equilibrium in the eye muscles of one or more degrees. In a large majority of these, there was a tendency for the eye to turn in, due primarily to the error of refraction present. In four, strabismus was present, which was Nature's occasional method of relieving a patient from the disturbing influences of abnormal refraction, or difference in acuity of vision in the two eyes. In seven, the line of vision of one eye tended above its fellow, causing, usually, a

tilting of the head to bring the lines of vision upon the same plane. This condition, called hyperphoria, is a prolific source of eye-strain. The smaller amounts of this trouble are relieved by wearing, in combination with the lenses correcting the refraction, prisms with the base placed either up or down. The larger amounts of deviation require either tenotomy or advancement of the muscle to secure the proper balance.

The errors of refraction found in those examined were: Hyperopia (farsightedness), 5; hyperopic astigmatism, 10; compound hyperopic astigmatism, 63; myopia, 1; myopic astigmatism, 3; compound myopic astigmatism, 8. The refraction of one eye did not correspond with that of its fellow in fifty-four cases, while the refraction was the same, in each eye, in twenty-six of those examined. Where the refraction of the two eyes differ, there is greater liability of increased eye-strain on that account.

You will notice that astigmatism plays a very important rôle, at least two-thirds of the entire number showing a difference in the refraction of one meridian and that at right angles to it in an individual eye. Both near vision and distance vision is but seldom continually normal in astigmatic eyes. It may be possible, by forcing the accommodation or by partly closing the lids, so to make pressure on the cornea as to neutralize, temporarily, the abnormal curve of the eyeball and thus improve the vision. In this manner, latent astigmatism is shown. The best vision obtainable by proper lenses is frequently, I might say usually, better than that indicated as normal by the ordinary charts used in testing vision. There is a great variation in the size and shape of all the organs of the body, and they frequently differ from the typical or normal. The eye is no exception to this rule. If we are born with abnormal eyes, or have eyes that differ from each other, we learn to correct this, as we learn to see, by training certain muscles to certain duties. The error is always there, however, and vision is never clear without the extra effort. Unconsciously the effort is always made to give us clearly defined visual impression. Where the curve of the cornea is uniform, the muscle of accommodation can usually produce clearly defined visual impressions, but where it is not uniform continual effort is made in the adjustment to improve the vision, and this repeated time after time is the cause of eye-strain. Those with normal eyes, in good health, can use them almost continuously for close work, without a thought of discomfort or pain, but even with good vision abnormal eyes will get tired and give trouble with a moderate amount of work. The normal eye rests when looking beyond twenty feet, but the abnormal eye must always be adjusted, by the expenditure of nerve force and muscular effort, when looking either far or near.

With good health and a stable nervous system this constant waste of nervous energy may not be noticed. Overwork, worry and illness may make such inroads on the reserve supply of nervous energy that there is little to spare for the continuous drain made necessary by defective eyes. We demand clear vision, so the shortage of nerve force may be made manifest away from the eyes, possibly in the development of insomnia,

irritability, nervousness, nausea, vertigo and nervous dyspepsia and many other distressing symptoms.

It is interesting, and surprising, to learn what relief comes to some patients, who have suffered for many years, when they arrive at the age of presbyopia, in the vicinity of 45 years. At this time, owing to changes in the lens, the ciliary muscle ceases to be active and, for this reason, the patient gets relief from various nervous symptoms, and especially from sick headache. Also, for the same reason, distant vision will be dim and the patient will accept lenses which heretofore he refused. At this time, also, the physician who has previously estimated the refraction, both without and with a cycloplegic, is oftentimes surprised at the amount of hyperopia and hyperopic astigmatism which was latent and which becomes manifest with the full relaxation of the ciliary muscle.

The relation of eye-strain to the pupils' work is a branch of the subject assigned me that could better be answered by the pedagogue. However, by numerous inquiries, I find there is a very direct and important relation. Eye-strain, by its direct effect on the general health, is apt to cause irritability, restlessness, inattention and those disorders resulting from nervous exhaustion. All of these would make for poor and unsatisfactory work. Cohn, Risley, Randall, Oliver, Allport and many others have done a most important work in showing the relation of improper school hygiene and its deleterious effect on the pupils' eyes. There is a tendency to develop myopia, and, when myopia is present, to cause an increase of it. This is, then, a diseased condition, and, without proper care, is apt to lead to serious results in the future. This condition is due to uncorrected eye-strain, improper light, overcrowding, impure air, etc. The conclusions drawn by Dr. Risley, after exhaustive study of this phase of this subject, are: 1. The schools can not be held solely responsible for the harm which befalls the eyes of the school children during the educational process, since it has been shown that a very large percentage of the children enter the schools with congenitally defective eyes. This conclusion is strengthened by the fact that these defective eyes have been shown to be especially liable to injury from use, while the model or emmetropic eye, most nearly approaching the ideal state of refraction, enjoys the highest acuity of vision, is comparatively free from pain, and maintain a nearly uniform percentage in all the grades of school life.

2. In the light of the preceding conclusion, it is highly important that every child seeking to enter the schools should be subjected to a systematic examination as to the state of vision, and, where this is found defective, the parents should be notified and advised of the probable harm which will result from the school work, if professional advice is not secured.

3. The skilful correction of the errors of refraction in our children's eyes by glasses would go far to arrest the acquisition of near-sight and its attending pathologic conditions. It would also prevent the asthenopia which precedes and accompanies the increase of refraction.

4. The very great frequency of these congenital anomalies should stimulate our school authorities to the adoption of every sanitary precaution and to the most scrupulous avoidance of faulty educational methods.

323 West State Street.

MODERN CONCEPTIONS OF THE METABOLISM OF THE DIABETIC.*

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Diabetes, as all authorities agree, is an essentially chronic disease in which the power of the organism to split up glucose is pathologically diminished or, accepting a recent definition of von Noorden, is a chronic disease in which glucose is excreted in the urine. It goes without saying that we exclude from discussion the question of normal glycosuria, which is not recognizable by the usual clinical methods, just as we rule out of the considerations all conditions in which the metabolic disorder has to do with the improper handling of levulose, maltose, lactose, pentose, etc., by the organism. Likewise, we do not regard as diabetic those conditions in which a glycosuria follows the intake of large quantities of glucose or of starchy foods (the so-called alimentary glycosuria), or those disorders of the liver in which a glycosuria follows as a result of impaired hepatic function, especially when the administration of levulose is followed by a levulosuria. This latter condition is the glycosuria of hepatic insufficiency and differs, in many respects, from the true diabetic type in which the glycogenic function is impaired, but in which levulose is handled by the liver in a different way.

GLYCOSURIA.

According to the older writers, the normal blood contains 3 to 4 P. M. of glucose. With better and more accurate methods of examination, it has been found that 1 P. M. is more nearly the true glucose content. Just as is doubtless the case with the proteids, the carbohydrates exist in the blood, not in the free state, but in combination with some as yet unknown bodies. The discovery of Jecorin, by Drechsel, shows us that such compounds may exist. Also, it will be recalled, Semmola assumed the combination, in normal blood, of the proteids with other substances, and recently Geelmuyden has advanced the hypothesis of a pairing of the acetone bodies with glycuronic acid in the same way as various glycuronates are formed in the metabolism of certain drugs. This idea of Geelmuyden is, however, open to objections on purely chemical grounds, while the other hypotheses have a firm basis and will, doubtless, be proven ere long.

The condition of glycosuria must occur when the amount of sugar in the blood exceeds the normal limit, providing no excessive demand is being made on the carbohydrates by the system. In other words, we must have, as antecedent to a glycosuria, a hyperglycemia. The idea of Kolisch, that the glycosuria was dependent on an insufficient fixation of the sugar in the blood is not, at present, generally accepted, inasmuch as the non-existence of glucose in the free state has not been definitely established. Increased permeability of the kidney has also been considered as explaining the glycosuria of diabetes. It is doubtful whether such a condition exists, as the mass of clinical evidence goes to show that

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the kidneys are not, in true diabetes, more permeable than normally. However, in the glycosuria following the administration of phloridzin, a hypoglycemia is observed, so that we are forced to the conclusion that this condition is of renal origin in such experimental cases. In certain cases, patients, showing symptoms and signs of nephritis, suddenly manifest glycosuria, to which complex has been given the name "renal diabetes." We must, however, remain dubious regarding the relation of this glycosuria to increased permeability of the kidney. As von Noorden says: "The doctrine of renal diabetes remains in the region of hypothesis." As a hyperglycemia occurs in all cases of spontaneous or experimental glycosuria, with exception of phloridzin diabetes, we must assume that this condition plays some rôle in the causation of the glycosuria.

IN THE NON-DIABETIC.

A hyperglycemia, with resulting glycosuria, may follow enteric, hepatic, pancreatic, muscular and nervous disorders; but the glycosuria, in all these cases, is not of the true diabetic type. From the days of Bernard's "piqûre," nervous influences have been so much considered in the etiology of diabetes that Hoffman was led to formulate his theory of a special neurogenous type of this disease. The point must, however, be considered that puncture of the floor of the fourth ventricle as well as other nervous influences which affect the activity of the liver cause a glycosuria only so long as the supply of glycogen in the organs lasts. That nervous factors enter into the causation of certain forms of alimentary glycosuria, as observed in neurasthenia and hysteria, for instance, can not be doubted, yet the true chronic diabetic glycosuria is evidently far beyond the entire control of nervous influences. Different clinical manifestations of a disease do not necessarily imply a difference in the nature of the disease.

The ordinary alimentary glycosuria is the resultant of an excess of carbohydrates in the diet. The glucose, carried to the liver by the portal vein, is in too large an amount to be converted into glycogen. Some passes through unchanged and sufficient time is not given to permit of its transformation into fat either in the liver or elsewhere. A hyperglycemia, with secondary glycosuria, occurs as a result of these abnormalities. The question of the individual tolerance for carbohydrates, as well as the consideration of the kind of carbohydrate ingested, must be remembered, as we know that wide variations exist in these factors. However, we observe in the alimentary type following the infectious diseases, that other than direct hepatic factors are at work. Disturbances of the functions of the pancreas, especially due to the activity of the toxins of the disease in question, influence the glycogen-storing capacity of the liver. The combined result of the primary pancreatic and the secondary hepatic disturbance is a glycosuria. In these cases the glycosuria is originally traceable to a disturbance in the proper handling of the carbohydrate ingested, but may later merge into a condition of disordered tissue metabolism showing the characteristics of a true diabetes. That such cases are not due entirely to hepatic insufficiency is shown by the fact that administration of levulose is not followed by an increase in the

glycosuria or an excretion of levulose, as is so well known to be the case in the glycosuria of hepatic insufficiency.

IN THE DIABETIC.

When we consider the hyperglycemia and glycosuria of a true diabetic, we find that the glucose, coming from the foodstuffs or the breaking down of proteids and fats of the tissues, is not handled as in the non-diabetic. The cells are not in condition to utilize the glucose circulating in excess in the blood, but can use it when the power of intermediate polymerization into glycogen exists. The cardinal point in the causation of the glycosuria is the defective formation of glycogen in the liver. Although excessive production of the glucose has been stated to be the cause of the hyperglycemia and glycosuria, we must rule out this factor as far as a primary overproduction is concerned. Owing to the inability of the cells to utilize the glucose as such, carbohydrate hunger of the cells occurs, calling forth new formation of sugar from the glycogen present. When this source is exhausted, as happens early in diabetes, the proteids and fats are brought into the field of action. This is a true secondary overproduction of sugar and is a consequence of the defective formation of glycogen. The diabetic organism shows a very low glycogen content, which proves the point of defective formation of this substance, although this fact has been interpreted as meaning an excessive production of sugar. Likewise this defective glycogen formation may be taken as the cause of the lessened oxidation of glucose observed in diabetes. We should expect that increased muscular effort would use up the excessive carbohydrate circulating in the blood, if the only factor disturbed were the production and storing of the glycogen. Such is, however, not the case, as has been shown by many experiments, simply because the cells are not able to utilize the free glucose, but can do so only after it has entered into firm chemical combination with the protoplasm of the cell. This function the carbohydrates can not perform where the power of forming glycogen is lost. In those cases in which the glycogen formation is reduced but not abolished, a certain reduction of the glycosuria is possible by increased muscular effort, but in the grave cases such a reduction is not observed, nay, even the reverse may obtain. That the glucose, as such, is not utilized by the diabetic is likewise shown by the low respiratory quotient observed even after carbohydrates are given in large amounts. The work of Mohr, Baumgarten and others seems to show that the oxidation of glucose is at fault in so far as the first splitting of the molecule is concerned, for the gluconic, glycuronic, saccharic and other acids are handled by the diabetic quite as well as by the non-diabetic.

The diabetic is able to utilize the isomeric sugar, levulose, for a certain length of time, as Bouchard and Kulz have shown. Glycogen is readily formed from levulose, even in animals with extirpated pancreas, and a glycosuria is lessened after its use. After a time the diabetic loses the power of utilizing this carbohydrate and the glycosuria is increased as a result. The sugar excreted after use of levulose by the diabetic is, for the most part, glucose. If levulose appears along with glucose, the prog-

nosis becomes very grave, as this usually indicates the entire breaking down of carbohydrate assimilation.

If, then, glycosuria be a result of the inability of the diabetic organism to utilize glucose as such, and this inability be due to defective formation of glycogen, what brings about this latter condition? Following the earlier ideas of Frerichs and Lancereaux and the experimental evidence of von Mering and Minkowski, we now believe that lesions of the pancreas are intimately associated with the conditions which obtain in diabetes. The islands of Langerhans have been considered as having more to do with the causation of the symptomatology than the other parts of the pancreas. Their influence is, however, uncertain, as many cases of diabetes show no lesion in these islands and many show no abnormality in the pancreas itself. It is more than probable that the pancreatic influence is more subtle than the naked eye or microscope can detect and hence no observable changes are found. Chemical influences are known to be at work in all lesions of the pancreas; hence it is rational to assume that such influences may be present without pathologic lesions being manifest.

Von Mering and Minkowski, observing that extirpation of the pancreas brought on the symptomatology of diabetes, assumed that the pancreas normally pours out an internal secretion, which is concerned with the elaboration of sugar. Of course, in extirpation or marked lesion of the pancreas, this secretion fails. Lepine believed that a glycolytic ferment was lessened after removal of the pancreas or as a result of lesions of this organ. Cohnheim showed that muscle-extracts act as activators of the pancreatic extract in its glycolytic action. Embden and Claus later showed that this result was due to the infection of the extract and that no such activation was observed when the muscle extract was kept sterile. We are, therefore, no nearer the solution of the problem at the present time than at the time of the discovery of the influence of pancreas extirpation. Recently von Noorden advanced the view that either a ferment having to do with the polymerization of sugar into glycogen or an anti-ferment which prevents too rapid destruction of glycogen may be given to the blood by the pancreas. Lack of either of these principles would lead to the conditions observed in diabetes.

THE ACETONE BODIES.

The most ominous symptom or condition of diabetes is not the excretion of glucose, but the elimination of the acetone bodies observed in most cases at some time during their course. We must consider the B-oxylbutyric acid, diacetic acid and acetone as forming a series in which the former is the one from which the other members are derived by oxidation. The condition arising from a surcharging of the blood with these bodies is known as acidosis. For a long time it was supposed that carbohydrates were not only accountable for the glycosuria, but also for the acetonuria and acidosis noted in diabetes. In the advance of pathologic chemistry, it has been shown that, instead of causing these latter symptoms and conditions, the carbohydrates in reality lessened them. This can be shown by the administration of a definite amount of sugar, especially in

the milder types of the disease, to a patient, from whose diet sugars have been previously excluded. The omission of sugars from the diet forces the organism to utilize its proteid and fat material and thus gives rise to an accumulation of nitrogenous and fatty metabolic products as well as to an increase in the acids of the body fluids. In this way an acidosis already present would be increased in intensity. If the carbohydrate-free diet be continued for some time, a readjustment takes place and the acetonuria gradually diminishes, reaching the normal point, as is instanced by the fact that certain races show no acetonuria, even though on absolutely carbohydrate-free diet.

With regard to the proteids as the mother substances of these bodies, we must admit that their influence is, to some extent, a double one. In the first place, proteids tend to diminish the acetonuria on account of their carbohydrate content, those proteids containing the highest amount of carbohydrate groups not necessarily exerting the greatest effect either on this condition or on the glycosuria. With a diet excessive in proteid, the influence is, however, not of this sort. The sulphuric and phosphoric acids, as well as the small amounts of acetone bodies, formed by the hydrolysis of the proteids, tend to increase an existing acidosis, while the excessive carbohydrate formed (45 grams from 100 grams of proteid) by the splitting of these proteids may greatly increase an existing glycosuria. These points, together with the fact that the products of nitrogenous metabolism, may greatly increase the osmotic equivalent of the blood and thus lead to disordered cell function, show us that proteids can not be advantageous as an exclusive diet in diabetes. As is well known, the nitrogenous excretion is much more marked in a diabetic than in a non-diabetic, owing to several factors. In the first place, the diabetic consumes more proteid than the normal because his diet is limited as regards carbohydrates and must be made up to a requisite caloric value by proteid and fat. Secondly, owing to the lack of the proteid-sparing function of the carbohydrates, excessive proteid is broken down and elaborated in order to furnish a portion of the energy necessary to maintain the body functions. It must, however, be said that the diabetic protects himself, for a time, from the unusual loss of proteid by the utilization of fat.

Concerning the fats, it is to be recalled that, although formerly accredited with no power of influencing the acetonuria, to-day they are regarded as directly affecting this condition to a great extent. This is true of the fatty acids, especially the lower members, and not of the neutral fats. If the contention of Castle and Loevenhart be true, that a reversible action of the lipase converts the fatty acids and glycerin formed by a previous hydrolysis, again into neutral fats, then the influence of fats on the acidosis is variable, or else we must assume a lack of lipase in the cells of the diabetic. We know that the fatty acids belong to the ketoplastic group, yet, as Borchardt has recently shown in Waldvogel's laboratory, this ketoplastic action is, doubtless, due to the union of the fatty acids with glycerin, thus withdrawing from the system the anti-ketoplastic body, glycerin, and enabling the remaining fatty acids to exert their influence on the formation of the acetone bodies. Fats do

not increase an existing glycosuria, as many experiments have shown, yet we must grant that a formation of sugar from fat does take place. von Noorden speaks of a "facultative formation of sugar out of fat," referring to the fact that the demand for sugar may become so great that this source is called upon to furnish its quota of carbohydrate. We must also remember that the synthesis of fat from the disintegrated carbohydrate is much affected in diabetes. Were this not the case, a large part of the sugar, reaching the blood as such, would be synthesized by the fat-forming cells and the glycosuria would be diminished. Conceiving this latter function to be normal while the former is abnormal, we can readily see the close relationship between obesity and later diabetes. With an excessive diet of fat, no more fat is oxidized than when the diet is low in fat. In the latter case, the body fat is utilized to furnish the difference, while in the former the excess is deposited in the usual fat depositories.

While acetone bodies appear in the urine and expired air of patients suffering from diseases other than diabetes, yet the amounts excreted are small as compared with those in diabetes. As Mohr has shown, these cases can all be traceable to the limitation of carbohydrates in the diet. Although these bodies arise from the fatty acids, for the most part, they can be shown in the urine and expired air only when the system has, at the same time, little chance of utilizing carbohydrates either on account of disease or diet. The excretion of the acetone bodies is little influenced by the amount of fat in the food in the normal, providing the carbohydrate content of the diet is good.

COMA DIABETICUM.

This complex, originally described by Kussmaul, is to-day generally conceded to be due to an intoxication with the acetone bodies; in other words, is an *acidosis*. It must be remembered that the less acetone and the more diacetic and B-oxybutyric acid are excreted so much the more doubtful becomes the prognosis. There are cases in which practically no acetone, a slight amount of diacetic acid and large amounts of B-oxybutyric acid are excreted. These are the cases which are more likely to manifest sudden symptoms of coma, inasmuch as they indicate a very low condition of metabolic activity and a tendency to marked intoxication. A convenient factor for judging of the extent of the excretion of the acetone bodies is the ammonia excretion. In the metabolism we find that any increase of acid above the amount easily satisfied by the preformed fixed alkali is combined at once with the ammonia liberated by the hydrolysis of the proteid molecule. This goes on, up to a certain limit, as only a portion of the nitrogen can be set free as ammonia. At this limit, the fixed alkalies must again be called upon to neutralize the excess of acid, as free acid rarely if ever appears in the urine. The result of this combination is that ammonia is increased and the urea diminishes to such an extent that the ammonia may reach even 30 per cent. of the total nitrogen of the urine. Later we may find after an enormous increase in the ammonia excretion the calcium and magnesium content of the urine becoming very high, as Gerhardt and Schlesinger have shown. It is,

therefore, easy to understand that the alkalinity of the blood is diminished by all this withdrawal of alkali. According to Naunyn, this is the principal factor in the causation of the diabetic coma. As Herter has shown that B-oxybutyric acid and its salts are toxic, we must assume that the specific action of this acid plays a rôle in addition to the general acidosis. It is possible, as von Noorden suggests, that other as yet unknown substances may aid in producing this complex.

Many other factors, such as the purin metabolism, the osmotic properties of the blood, the lipemia, etc., must be left untouched owing to lack of time. In closing this brief outline of diabetic metabolism, I wish to make the point that each case of diabetes is an individual one; that is, general rules apply only to a certain extent, special ones being necessary to explain certain peculiarities and reactions to diet and treatment. The diabetic is a never-failing source of investigation and much that is now dark may, we hope, be cleared up by persistent, close and accurate observation of any and all deviations noted.

100 State Street.

THE MODERN DINING CAR.*

M. CAVANA, M.D.

Ex-President of the New York State Association of Railway Surgeons; First Vice-President of the American Association of Railway Surgeons.

ONEIDA, N. Y.

In this age of marvelous progress, so conspicuous in its contributions to human ease and entertainment, the American railway may be justly accredited with its share of popular achievements. Among the many developments in railway circles during the last quarter of the nineteenth century, none has been more favorably received by the great traveling public, than the "restaurant on wheels," the luxurious dining car. When we reflect upon the crude methods of the past, and recall the partially masticated lunch, so much more conspicuous in quantity than in quality and variety, which was forced upon the hungry tourist during the proverbial "ten minutes for refreshments," we enthusiastically contrast the beautiful compartments and artistic furnishings; the elaborate and tempting menu, comprising choice food products of the world; the superb service by expert attendants in surroundings of immaculate cleanliness, which are enjoyed by the traveler of to-day in the up-to-date dining car. As every beautiful organism has its skeleton interior, so the sumptuous dining car of to-day has its regrettable criticisms, which constitute conditions of such importance to our railway companies, of so grave liability to the traveling public, and of such interest to the professional men of our chosen specialty, as, in our opinion, to justify the submission of the subject to the consideration of this association.

Toxicosis from infected foods is so frequently encountered in the medical practice of to-day that it has gained a place in the long list of

* Read at the Annual Meeting of the Association of Railway Surgeons, held at Chicago, Oct. 17-19, 1906.

human ailments of especial prominence. Day after day we encounter and read of violent attacks of illness resulting from food poisons, many of which seizures prove serious and some fatal, yet, up to this late date, practically nothing has been accomplished by either our legislatures or the medical profession toward remedying the causes and protecting the people from this unmistakably growing evil.

The writer's data for the three years ending Sept. 1, 1906, prove that over 80 per cent. of the Central New York cases of toxicosis resulted from the eating of the poultry foods of the every-day markets. Reflection upon this fact very naturally leads to the inquiry, Why so great an amount of poultry infection? In reply, let me say with all possible emphasis that we are convinced that it is directly due to the fact that practically all of the slaughtered poultry stock of the nation's markets is supplied from the cold storage warehouses of the cities, where the stock is stored for years, in its filthy undrawn state. During the past two sessions of the New York legislature, unsuccessful efforts were made to secure the enactment of a law that would effectually correct the existing dangerous practices of the cold storage industry, and, at a hearing before the state assembly committee on the proposed law in 1905, the information was gained, through the admission of one of the cold storage warehouse owners, that poultry was kept in storage for three and four years in the undrawn state, and then sold for food. In fact, one of the managers presented the assembly committee with an undrawn capon which, he claimed, had been stored for four years since slaughter. In the dining cars and restaurants of most of our railroad lines, poultry comprises one of the principal meat foods of their stocks, and spring chicken is generally quoted upon their bills of fare for every month of the year.

Dr. Wiley, the Chief Government Food Chemist at Washington, in the *Boston Journal* of last November, states: "I asked for spring chicken in a dining car on one of our best railroads the other day, and the waiter brought me what he said was spring chicken, but of what spring? The chicken was not fit for any human being to eat. I called the superintendent of the dining service and said to him, 'Why do you serve such chicken as this? You know it has been in cold storage three or four years, is *passee*, and is a menace to the health of any person who eats it.' 'What do you expect for a dollar?' was the only answer I got out of him." Dr. Wiley further states: "I relate this chicken story to illustrate the point that much of the poultry that is served is not fit for food."

In October, 1904, Mr. M. H. Hubbard, architect of Utica, N. Y., became suddenly and seriously ill after a dining car meal at which he ate heartily of turkey. Becoming too ill to proceed upon his journey, he left the train for a hotel, where he secured medical attendance, and, after six days' illness, resumed his journey. Mr. L. B. Cheesebrough, proprietor of the St. Charles Hotel, at Sylvan Beach, N. Y., ordered from a certain hotel supply company of New York City, in August, 1904, a stock of poultry for his hotel kitchen. The shipment arrived on August 9 in the usual undrawn condition. On the following day Mr.

Cheesebrough ate of a broiled spring chicken at his evening dinner and also partook of the stock at a late lunch of the same evening. Early on the following morning the evidences of severe toxicosis were manifested, and, after a week's illness, the case terminated fatally. This patient was an intimate friend and consequently the case came under our professional care. Its distressing history and sad termination lead us to the conviction that the time had arrived when the profession and world should be made aware of the menaces to health and life resulting from the practices of the poultry and game dealers, of storing their stocks for sufficiently long periods, in the undrawn condition, as to render them fatally poisonous.

A long list of other cases, victims of poultry poisoning, might be submitted, but we withhold further mention of instances, desiring to devote the balance of our time to a brief consideration of the bacteriologic side of the subject; we, therefore, submit a somewhat concise review of our tests and experiments made upon one hundred specimens of cold storage undrawn poultry, which were purchased from the retail counters of meat markets in certain New York State cities, where the specimens were exposed for sale as food. Bacterial cultures made from the breasts and legs of the one hundred specimens proved the presence and thorough permeation of the tissues in each specimen, with the various groups of intestinal germs, some tests showing no less than eleven distinct groups in one poultry specimen. Among the varieties of pathogenic bacteria identified was the *Bacillus coli communis*, the *Staphylococcus pyogenes aureus*, the *Bacillus proteus vulgaris* and the *Streptococcus pyogenes*. Previous tests of intestinal matter taken from the entrails of recently slaughtered fowls revealed the presence of these latter germs in great abundance in the intestinal canal of every fowl examined, and their discovery in the remote tissues of the undrawn cold storage specimens proves unmistakably that their source was from the alimentary canal, and that their permeation of the tissues was the direct result of the retention of the intestinal tract and its contents in the sealed abdominal cavity of the poultry carcasses.

Growers of poultry will support us in the assertion that the ducks and hens of the barnyard are the scavengers of the farm. They are constantly picking over the soil, the farm garbage heaps and other bacterial hotbeds, and no accretion or mass of decaying matter ever becomes too repulsive for poultry food, especially for that of hens. In our bacteriologic studies, all of the cultures were made from the eatable tissues of the various specimens, and with the most thorough aseptic precautions. The *Bacillus coli communis* was found in 100 per cent., or every specimen tested; the *Bacillus proteus vulgaris* in 6 per cent.; the *Staphylococcus pyogenes aureus* in 20 per cent., and the *Streptococcus pyogenes* in 65 per cent. of the one hundred examinations.

The cold storage plant owners of New York City inform us that their poultry stocks are collected from all parts of the country, even as far distant as the States of Texas, Louisiana and Florida. Shipments are made by rail and steamship, and cover transit periods of several days

before reaching the cold storage atmospheres of the storage warehouses. After slaughter, the feathers are removed and the carcass packed in barrels without further dressing. The head, feet and legs, as well as the craw of partially digested food, the decomposing livers, lungs and intestines with their filthy contents all combine to make valuable weight, and are, therefore, left in the sealed cavities of the fowls, framing conditions which force the general infection of the tissues by the flagellated or rapidly swimming intestinal bacteria.

To determine the activity of these germs and the period required for their permeation of the tissues in the slaughtered undrawn fowl, we caused to be made a series of experiments, the results of which justify the belief that a great percentage of the infected poultry and game stock in storage became so infected before reaching the low temperatures of the storage warehouses. In our first experiment, a healthy hen was slaughtered and stored in its undrawn or original undressed condition in the temperature of the ordinary refrigerator, that of plus 40 degrees F. Cultures from twelve-hour tests proved that at the end of the ninety-sixth hour after slaughter the groups of intestinal bacteria had invaded the abdominal walls and the tissue outside of the abdominal cavity. At the ninth twelve-hour test, or four and one-half days after slaughter, the tissues of the breast and legs of the specimen were found to be thoroughly invaded, and vigorous cultures therefrom of the *Bacillus coli communis*, *Staphylococcus* and *Streptococcus* were made and their identification conclusively established.

Another similarly healthy, recently slaughtered fowl was stored undrawn in the temperature of the ordinary autumn season of the southern states, that of plus 70 degrees F. In this experiment, the intestinal bacteria were found in the tissues outside of the abdominal cavity at the end of the eighteenth hour, and thorough permeation of the breast and legs of the fowl was found to exist at the end of the twenty-seventh hour, or one and one-eighth days after slaughter.

The third experiment dealt with a slaughtered specimen that was properly dressed, or divested of its entire thoracic and abdominal viscera, within thirty minutes after slaughter. The carcass was then stored in a temperature of 40 degrees, as was our first experimental specimen, and bacterial tests were made every twelve hours, as in the previous experiments, for twenty-eight days, and no traces of the intestinal groups of bacteria were discovered in any portion of the fowl, even up to the fifty-sixth test.

Our fourth experiment consisted of storing a recently slaughtered and properly dressed and cleaned fowl in a temperature of 70 degrees and submitting it to semi-daily tests for fourteen days. Every test proved negative, and no traces of any of the intestinal groups of bacteria were found in any portion of the tissues, even up to the twenty-eighth test. Of course, the zymogenic (fermentative) and the saprogenic (putrefactive) groups were found upon the skin and in the cavities of these specimens, but, being non-pathogenic, they are consequently harmless in food products.

Of the colon bacillus, McFarland, in his latest work on "Pathogenic Bacteria," states that it is found normally in the alimentary canal of all animals and fowls; that it is provided with flagella, and is actively motile, or a rapid swimmer; that it begins to penetrate the intestinal tissues almost immediately after death; that it is so minute that four of the bacilli can pass abreast through the smallest pore of the human body; that it has been met with in puerperal fever, endocarditis, urethritis, appendicitis, the nephritis of scarlatina and in meningitis, and seems to be the pathogenic agent of the greater number of summer infantile diarrheas; that its toxin may be heated to a very high temperature without injuring its poisonous nature; that its virulence is increased by passage through animals; that it is resistant to antiseptics and will grow in culture media containing from 1 to 2 per cent. of carbolic acid. This is the germ that has contaminated the waters adjacent to New York City through the city's sewage, infecting the shell fish which had been deposited therein for bleaching, and is directly responsible for much of the cases of oyster poisoning of modern times. Of the *Staphylococcus pyogenes*, the same author relates that it is a dangerous and often deadly organism; that it is found in a great majority of furuncles, carbuncles, abscesses and cases of osteomyelitis, ulcerative endocarditis and interstitial nephritis. Of the *Bacillus proteus*, he states that it is found in decomposing animal infusions, is actively motile, and has been secured in cultures from wound and puerperal affections, endometritis, pleurisy and purulent peritonitis; that, like the *Bacillus coli*, it invades the tissues after death; that at times it grows abundantly in the urine, and may produce serious bladder and kidney inflammation. Of the fourth important germ found in our tests of the undrawn poultry, the *Streptococcus*, the author states that this organism is highly virulent; that it has been found in erysipelas, ulcerative endocarditis, periostitis, otitis, emphysema, pneumonia, lymphangitis, phlegmons, puerperal endometritis and meningitis; that in man it is usually associated with active forms of suppuration and sepsis; that the relation of this germ to diphtheria is of especial interest, on account of the number of cases where no diphtheria bacilli can be found, and which seemed to be caused by the streptococcus alone, and are, therefore, not controllable by the diphtheria antitoxic serum. This germ has no flagella and in consequence is not motile, yet it was found in 65 per cent. of our tests. Our belief is that the germ was conveyed from the intestines of the fowl, to its remote soft tissues, by adhesive association with the *Bacillus coli* and the *Proteus*, both of which, as previously stated, are actively motile.

It is the well-established practice of health boards, when contagious diseases and epidemics appear, to search for the sources of the contagion; and the water supply naturally becomes the first object of investigation, and the discovery of sewage contamination is always accepted as sufficient proof as to the source of the disease, and, when we consider the fact that such sewage contamination of water consists simply of its impregnation with the various classes of intestinal germs, which we find in the eatable tissues of the stored stock of undrawn quail, duck,

turkey, grouse and poultry of the general markets, which is so lavishly served in our dining cars, hotels and restaurants, and so generally the chief viand at the Sunday and holiday dinners of our homes, we feel that all fair-minded members of our profession will agree with us that the time has arrived for united and energetic action toward the further exposure and effective correction of those practices which are responsible for existing conditions.

The records of the New York State Board of Health show that the death rate in that state for the year 1900 was 15.7 per thousand of the state's entire population, and that for the year 1905 the death rate had advanced to 16.2 per thousand of the population, an increase of one death for every two thousand of the state's 8,067,308 inhabitants over the records of 1900. Accepting as practically correct the estimate that each death represents 1 per cent. of the number of cases of illness treated, we face the surprising conclusion that, during the year 1905, the increased number of the treated cases of illness in New York State, over that of five years previous, amounted to over 400,000, and the deaths to over 4,000. When we contemplate the improvements in treatment and means for combating disease, the advancement in pharmacy, chemistry and electricity, the improved medical compounds, antitoxic serums and the long list of new scientifically prepared remedies, the advancements in the required qualifications of our professional graduates and nurses, the perfection and life-saving results of modern surgery, and note that the records of fatality show unmistakable increases over the less advantageous conditions of former periods, we are forced to the conclusion that there is yet a growing source of human infection, disease and death not yet combated. Can any fair mind entertain the slightest doubt that this growing source is the direct result of the unclean practices of the modern cold storage industry?

The victims of poultry and game food toxicosis comprise two distinct classes: First, those who eat sparingly of the infected foods and escape any immediate serious consequences. While we may reasonably conclude that every quantity of intestinal bacteria, however minute, which becomes incorporated into the human organism must leave its trace, and, to a greater or less degree, shatter the health-protecting armors of Nature, we have this broad field yet to explore, and, consequently, are not in possession of reliable data, though we feel convinced that this class includes a large percentage of the sufferers from enteric and nephritic diseases, internal abscesses, and many of the other inflammatory and suppurative processes of the human structure.

The second class includes the susceptible subjects, possessors of insufficient resisting and recuperative powers, as children, the aged, the enfeebled. This class also includes those in vigorous health or otherwise, who have eaten heartily of or who have consumed large quantities of infected material. In fact, all of the known fatalities of our experience were of subjects in previously vigorous health, who had consumed large quantities of infected food at a single meal, or who had indulged in two successive meals of the material.

Unfortunately, the opportunities for special pathologic study in this

field have been very limited, as the fatal cases occurring under our observation could not be subjected to autopsy and such study, but our esteemed colleague, Dr. H. P. DeForest of New York City, has been better favored, and is in a position to supply the desired information. In a recent communication he announces a case of fatal toxicosis which occurred under his personal observation. The patient was a man who ate liberally of duck and soon after manifested pronounced evidences of poisoning and succumbed within a few days. The cause of death, as reported by Dr. DeForest, and verified by his autopsy in the case, was "Suppurative Inflammation of the Thoracic Duct." Dr. DeForest is an especially capable scientist and is preparing a report of the case in detail for publication, which will prove of great interest to the profession and of value to the cause of pure and wholesome food legislation.

We are convinced that the time for serious consideration of the present cold storage methods and their health and life-destroying results is at hand. The protection of the railway dining car and the safety of its patrons and the general public, is the prize at stake. Will the eminent gentlemen of this association enlist in this all-important cause, and each put forth his best efforts in the procuring of such legislation in the several states of our government as will compel, by law, as thorough and complete dressing, cleaning and preparation of game and poultry for storage and the market, as is now practiced by the slaughterers of beef, pork and mutton, and thus safeguard the masses from the dangers to health and life, which must follow continued indifference toward this situation?

PROGNOSIS AND SURGICAL TREATMENT IN TRAUMATIC RUPTURES OF THE KIDNEY, URETERS AND BLADDER.*

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CHICAGO.

Since the first nephrectomy for subcutaneous rupture of the kidney, which was performed by Studsgaart of Copenhagen in 1884, this part of renal surgery has gained some prominence; many of the now well-established procedures have done much to prolong life and preserve the function of these important organs. To accomplish a fair degree of success by surgical operations for injuries of the kidney and bladder, as much, if not more, depends upon the early and accurate diagnosis as on well applied surgical measures. The surgical treatment of these injuries will, of necessity, vary, depending on the kind and degree of damage inflicted. It is beyond question that many kidney lesions will heal when treated by the expectant plan alone, but that a large number of them thus treated will not do so is also certain. This is the experience of all surgeons, as statistics, a few of which I will give here, will abundantly substantiate.

In perhaps a rather larger per cent. of both kidney and bladder in-

* Read at the meeting of the Chicago Medical Society, Oct. 31, 1906.

juries, careful inquiry into the exact nature of the injury, a very critical analysis of all symptoms exhibited, and a painstaking physical examination will justify definite diagnostic conclusions. But, on the other hand, a class of renal injuries will be met with in which there are few or no symptoms; cases in which knowledge of the injury can not be obtained and in which no conclusions are justified. These are the cases which have hitherto contributed to such a high death rate and are responsible at the present time for a mortality much too great. For those who accept figures as evidence, a fair knowledge of the relative value of the different methods of treating renal and bladder injuries can be obtained by studying closely the following statistics: In Watson's¹ collection of 660 cases of subparietal injuries to the kidney, 273 were treated by the expectant plan, with 81 deaths; mortality, 30 per cent. Ninety-nine cases were treated by the so-called conservative operations, that is, operations other than nephrectomy, with seven deaths; mortality, 7.7 per cent. One hundred and fifteen cases were nephrectomized, with 25 deaths; mortality, 21.7 per cent.

These figures correspond with Sutter's² 211 cases and with the list of 490 cases collected by Delbet³ and Riese.⁴ Of Sutter's 211 cases, 100 were unoperated and 16 died; mortality, 16 per cent. Three hundred and twenty-seven of the cases collected by Delbet and Riese were unoperated, with 72 deaths; mortality, 22 per cent. The combined number of unoperated cases of the three collections was 427 cases, with 88 deaths; mortality, 20.6 per cent.

Of Sutter's cases, 58 were operated on by methods other than nephrectomy, 11 deaths; mortality, 18.9 per cent. Eighty-five cases of Delbet and Riese were operated on by the conservative method, with 10 deaths; mortality, 11.7 per cent. The total number of conservatively operated cases was 143; deaths 21; total mortality, 14.6 per cent. Nephrectomy was performed 78 times in Delbet and Riese's cases, with 14 deaths; mortality, 17.9 per cent. Fifty-three of Sutter's cases were thus operated with a death rate of 8; mortality, 15 per cent. The total number of the nephrectomized cases of the three observers was 131, deaths 22; mortality, 16.7 per cent. It will be seen that the expectant plan of treatment gave the highest mortality, or 20.6 per cent.; that the next highest death rate was in the nephrectomized cases, which was 16.7 per cent., and that the lowest mortality, 14.6 per cent., was obtained in cases treated by the conservative operation.

When these statistics are carefully reviewed, it will be seen that they are hardly fair to the nephrectomized cases, because mention is not made as to whether they were primary or secondary operations; and, as Keen has shown that secondary nephrectomies are followed by a mortality much higher (38 per cent. for secondary as compared to 20 per cent. for primary operations), objections may be raised against them. On the other hand, these figures are more than fair to the cases treated expectantly, or the unoperated cases, because of the possibility, indeed the probability, of many cases being included because they gave a history of an

1. Watson: Boston Med. and Surg. Journal, July 16, 1903.

2. Sutter: Zentr. z. klin. Chir., 1905, vol. xlvii, pp. 349, 402.

3. Delbet: Ann. des Mal. des Org. Génito-urine Nos. 6 and 7, 1901.

4. Riese: Longenbeck's Archiv. für. klin. Chir., 71 Bd., Heft. 3.

injury and presented the symptoms of renal trauma, but which in reality were not kidney injuries. Histories of patients showing symptoms of renal lesions, such as hematuria, pain over the kidney region etc., are by no means conclusive proof that such cases properly belong to the class under discussion. Patients having sustained no injury may present practically all of the symptoms of a renal wound, while patients with serious injuries which have completely destroyed the kidney may not present a single symptom. Without an exploratory operation in these cases, no man is justified in expressing a positive opinion regarding them. In January, 1905, a patient, who received a gunshot wound presenting practically all the symptoms of a renal injury, was operated by the writer. The kidney was found practically unharmed, excepting a very small wound of the cortex made by the transit of the bullet.

A review of the work done in renal surgery during the past ten years leaves no doubt in the mind of the surgeon that the death rate in this branch of surgery should be greatly lowered. How is this to be accomplished? Not, perhaps, by any improvement in the technic of the well-understood operative procedures, but by some means whereby these steps may be executed much earlier than has been or is even now the custom. Valuable time is often lost, owing to the efforts made in attempting to make the correct diagnosis in cases without typical symptoms. Such instances are only too common, as cases like those presented by Bristow⁵ and one reported by the writer⁶ a year ago before this society will show. One of Bristow's cases did not present one subjective symptom of renal injury, but a laparotomy was done for a supposed rupture of the liver. The operation disclosed an absence of any intraperitoneal injury, but revealed a retroperitoneal condition which proved, through a loin incision, to be an irreparably damaged kidney. The organ was removed and the patient recovered. The second case, which was also misleading, presented a single subjective symptom, namely, a constant desire to urinate. The patient died in a few hours from hemorrhage, unoperated. In my own case, the symptoms were not characteristic of serious renal injury, although the operation showed a kidney torn away from its vessels and ureter and the organ severely crushed.

The inconstancy of the symptoms of renal injury, the great possibility of death from hemorrhage, and the utter impossibility of making an early and positive diagnosis would seem to justify the surgeon in adopting and urging that method which, if early, leaves no longer any doubt as to the nature of the accident. The exploratory incision would, it seems, come nearest to this, and should be classed among the other diagnostic measures. With gas anesthesia, the operation requires but a few minutes, is without danger and is always productive of vital information not otherwise obtainable. In cases, therefore, presenting doubt as to diagnosis, or cases which do not improve almost hourly from the time of the injury, procrastination should not be indulged in, but the exploration should be made at once. Whether the surgeon should do a laparotomy or open the kidney space through the loin will depend upon the possibilities of the

5. Bristow: Brooklyn Med. Jour., July 1904.

6. Fuller, Wm.: International Jour. of Surgery, Sept., 1905.

presence of complicating abdominal injuries. It must be remembered that the early evidence of the latter condition, as in kidney injuries, is often wanting; or even when only slightly in evidence may be easily overlooked. In cases not quite clear as to the nature of the injury, the laparotomy has much to commend it. In the first place, it in no way complicates the condition, and, besides affording knowledge as to the presence or absence of intra-peritoneal lesions, it gives a good idea often of the direction and extent of fluid extravasation, due to extra-peritoneal injuries; invaluable information in extra-peritoneal ruptures of the bladder to be presently referred to.

In approaching an injured organ through the loin incision, the utmost caution must be exercised in manipulating the organ and bringing it into view through the wound. This point, raised by Dr. Baccus of this society on a previous occasion, was well taken and is important, and particularly so with reference to kidneys that have been injured. The ease with which the renal veins may be torn, especially in injuries of the kidney, as Byron Robinson⁷ has shown, is, I think, hardly appreciated. Dr. Robinson cautions the surgeon regarding this point and is of the opinion that, owing to the shortness of the renal veins, especially on the right side, and the very close proximity of the ureteral pelvis to the vena cava, the latter may be opened in case of adhesions.

Of prime importance, always, in dealing with an injured kidney, is the control of hemorrhage, which presupposes a perfect knowledge of the blood supply to that organ.

The investigations of Byron Robinson have shown that the ureter possesses an independent blood supply which is continued from its proximal to its distal extremity, and that this structure may be purposely or accidentally isolated for several inches without fear or danger of its necrosis.

Of even greater importance than this are his teachings with reference to renal surgery. He lays emphasis upon the knowledge imparted by Hyrtl and shows that the kidney has a double circulation and that in incisions into the kidney, as in nephrotomies, if made through the exsanguinated renal zone of Hyrtl, or at the line of union between the ventral and dorsal segments of the kidney, the hemorrhage will be very slight. This knowledge should be the greatest help to the surgeon when operating upon an organ which has been injured, and should enable him to give a fairly definite prognosis as to the outcome in the majority of cases. If the renal vessels are severed, the condition of the kidney itself need not be considered. If, on the other hand, the circulation is uninjured, although the ureter be injured and the kidney lacerated, an attempt should be made to save the organ. Perfect control of hemorrhage, with adequate drainage, will result, in a large number of cases, in preserving a part, if not the whole, of the organ if the operation be done early.

Traumatic ruptures of the bladder are serious accidents and have been attended, until very recently, by a very high death rate. Ruptures of the bladder are much oftener intra-peritoneal than extra-peritoneal.

7. Robinson, Byron: N. Y. Med. Jour. and Phila. Med. Jour., Dec., 1904.

Bartels⁸ collected 169 cases which involved the peritoneum in 70 per cent. of them. The accident occurs, as a rule, by violence to the abdomen, as by blows and kicks when the bladder is full of urine; or, at times, to a more serious trauma, which may fracture the pelvis. The mortality of bladder ruptures, as figured by Ullmann's⁹ statistics was very high; 143 intra-peritoneal ruptures, with 1.3 per cent. recoveries; 94 extra-peritoneal ruptures, with 22 per cent. recoveries. Surgical treatment of bladder ruptures in subcutaneous injuries differs in but one important exception to the rules formulated by Rivington in his monograph published in 1884.

He divided bladder ruptures, as most writers have done before and since, into intra- and extra-peritoneal tears, and strongly recommended that, as soon as the diagnosis was made of the former injury, the peritoneal cavity should be opened. In ruptures of the bladder not involving the peritoneum he regarded the prevesical incision and drainage sufficient.

In Cabot's review of the subject, Sept. 23, 1891, two important objections to his latter procedure were pointed out. The first is that if, through the prevesical incision, urine should be found, there would be no way of deciding whether the extravasated urine had, by dissecting up the peritoneum at the side of the pelvic walls, found its way to some retroperitoneal location; second, there would be no way of excluding intraperitoneal ruptures, and emphasized the danger that would attend an effort to demonstrate this by opening the peritoneum secondarily. The purpose of his paper, therefore, was to advocate the advantages of the peritoneal incision in practically all cases, whether the tear was intra- or extra-peritoneal, and to lay down some rule or procedure which would safely guide the surgeon without waiting to make a diagnosis.

Although Cabot placed little reliance on the methods of making the diagnosis previous to exploratory incisions, he regarded Wier's test of injecting water into the bladder of, perhaps, more importance than is usually accorded it. He said this little experiment should be repeated several times and if, with each repetition, the water returned in varying quantities, such evidence was just as valuable as when there was no return at all. He warned the surgeon against negative evidence which might be obtained, for two reasons: the first was the small size of the rent in the bladder, which would prevent the passage of the fluid through it; the second was a large opening which might become plugged with a loop of intestine, as happened in one of his own cases. It requires no argument to show that a laparotomy will, in bladder injuries, quickly and safely settle the question of intra-peritoneal rupture, and, by the aid of palpation and sight, give the best possible view regarding the extent and location of extra-peritoneal urinary extravasation. Moreover, it furnishes the necessary information for the purpose of proper drainage, which Cabot regarded as the prime consideration in all bladder ruptures. In a case of extra-peritoneal rupture which he reported, the abdominal incision

8. Bartels: *Archiv. f. klin. Chir.*, vol. xxii.

9. Ullmann: *Handbuch der Prakt. Chir.*, J. von Bergman, vol. iv, 1st ed.

suggested the means of draining a large collection of urine and blood, which had dissected up the peritoneum at the sides of the pelvis and had reached a location behind the peritoneum. The incision generally made for ligating the common iliac arteries was used to drain this case, which proved in every way satisfactory.

Among the important things to remember in bladder injuries are the predominance of intra-peritoneal ruptures, their very great mortality if not early operated, and the different localities which may be reached by extravasated urine in extra-peritoneal ruptures. In ruptures of the latter kind, the urine may fill the tissues around the neck of the bladder only; it may reach the abdominal wall by lifting up the peritoneum in front, or what is more likely, dissect it up from the sides of the pelvis, finding a retroperitoneal location even as high as the kidney. In cases that have been temporized with, the urine, with other fluids, will constitute large collections whose cavities can not be perfectly drained without definite knowledge, such as palpation and vision will give one, from within the peritoneal cavity.

In May of this year, a case of my own which was thought to be an intra-peritoneal tear of the bladder proved, on opening the abdomen, to be only an extra-peritoneal one with very extensive leakage and accumulation of urine in the bottom of the pelvis and also in the space of Retzius. The opening of the abdomen in this case gave at once the clearest possible evidence of the nature and extent of the injury. The abdominal incision was closed and supra-pubic and infra-pubic drainage introduced. Besides having a ruptured bladder, the patient had multiple fractures of the pelvis, also of the neck of the left femur, with great laceration of the soft tissues about the anus, which extended up the rectum for about two inches. The patient's death, which occurred from general sepsis on the twelfth day, left no doubt in my mind that the knowledge gained by the laparotomy in this particular case was not used to the best advantage in the subsequent treatment.

The case was drained supra-pubically and infra-pubically with tubes and gauze, which seemed sufficient at the time. The mistake, however, which was a serious one, was not realized until it became necessary to renew efforts at drainage on the fourth day, and until the death of the patient, which occurred eight days later.

The question of renal and bladder surgery with reference to injuries is far from being a settled one. The present methods of diagnosing these injuries are lacking in reliability. The means of determining pathologic conditions of renal organs due to causes other than injury are inefficient and useless here. The points, therefore, which are of great interest to the physician in the study and consideration of this subject are, first, due appreciation of the dangers accompanying and following the injuries to the kidney, ureters and bladder; second, the symptomatology, which is a diversified one, and on which too much reliance should not be placed; third, the importance and value of early, well-selected and conservative operations, which should be the rule in all serious and doubtful cases.

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DECEMBER, 1906.

CHARGES FILED AGAINST SUPERINTENDENT OF THE INSTITUTION FOR FEEBLE MINDED CHILDREN AT LINCOLN.

Charles T. Hoblatt, chief clerk of the Feeble Minded Institution at Lincoln appeared before Governor Deneen on November 13 and filed charges against Dr. C. B. Taylor. It is stated that the charges were turned over to W. C. Graves, secretary of the State Board of Public Charities for investigation and will, in all probability, be acted upon at the next meeting of the board. In the meantime, it may be asked how many more times it will be necessary to investigate this institution before some radical change is made. For many years it has been considered far behind the standard of institutions in other states and it has been the opinion of those familiar with its conduct that it is high time for action.

DR. MOYER RETIRES AS EDITOR.

Mr. E. G. Swift, of Detroit, publisher of several medical magazines issued under the auspices of Parke, Davis & Co., announces, under date of November 15, that there will be a consolidation of the *Medical Age* and *Medicine* with the *Therapeutic Gazette*, beginning January 1, 1907.

The editors of the enlarged journal will be Drs. H. A. Hare and Edward Martin. This will result in the retirement of Dr. Harold N. Moyer, who has been the able editor of *Medicine* since its inception, and who has succeeded in giving to that journal a remarkable standing among the medical periodicals of the West. In bidding farewell to Dr. Moyer as an editor, we gladly bear witness to his ability as a writer and regret that he will be no longer active in this field.

GOVERNOR DENEEN VISITS STATE INSTITUTIONS OF NEW YORK AND PENNSYLVANIA .

Governor Deneen, after attending the meeting of the directors of the Illinois Central Railroad in New York City, visited several state institutions of New York and Pennsylvania and, on his return, told a newspaper reporter that in buildings and sanitation, the Illinois state charitable institutions compared very favorably with those in the East, but that the fact is evident that the asylums in this state are not so well equipped in the medical departments and that less money is appropriated yearly to maintain them. The State Board of Public Charities has lately adopted active measures tending toward a higher standard of equipment in the state institutions and we are pleased to know that Governor Deneen appreciates the fact that Illinois is far behind in the general conduct of its institutions, especially in the medical departments. It is to be hoped that there will be no further delay in bringing about a change in the majority of them.

COUNTY SOCIETIES AND THE STATE SOCIETY.

In spite of the frequent explanations which have been made by officers of the state organization, as well as through the columns of *THE JOURNAL*, it is evident that the fundamental principles underlying the organization of the state society and its relation to the component county societies, of which it is made up, are not as yet clearly understood by all our members. It would not be surprising if this was true of new members, or of those who have not taken a prominent part in the work of conducting and managing county medical societies, but failure to grasp these principles is not limited to the beginners. In some cases, even the officers of the county societies themselves show by their letters and statements that they have not as yet thoroughly comprehended the relationship between the different parts of the organization, nor clearly understood what constitutes good standing as a member. A letter received recently from the secretary of one of our county societies is interesting for this reason. He writes, in reply to a letter sent him asking why the name of the president of his county society had not been reported to the state secretary. In his letter he says: "Dr. ——— is president of our county society, but has

never paid any dues to the state medical society; consequently I have not reported him in good standing to the secretary of the state society."

To understand thoroughly the present situation, it is necessary to consider very briefly the history of medical organization in the state. Prior to 1903 the Illinois State Medical Society was a distinct and separate organization, having no relation to the numerous county, district and local societies in the state. Membership was obtained by attending one of the annual meetings of the society and making application for membership. The applicant might be a member of his county society or not. Members of county societies joined the state society if they so desired. The state society had an annual due of \$3.00, which entitled the member to a copy of the transactions. In 1903, at the annual meeting of the state association, held at Chicago, the state society adopted a new constitution and by-laws in accordance with the general reorganization movement, which was then taking place. By the adoption of this new constitution, the old Illinois State Medical Society practically ceased to exist as an independent body. Membership was vested entirely in the county society, which thus became the sole judge regarding qualifications of applicants. A legislative body, composed of delegates from each county unit and called the House of Delegates, was organized. In the hands of this body was placed the entire legislative function of the state society. To defray the expenses of THE JOURNAL and of the officers of the state organization a *per capita* tax was authorized, which tax is levied each year by the House of Delegates on the county societies. Since the House of Delegates is made up of representatives from the county societies, this is practically equivalent to the county societies setting apart a certain proportion of their dues each year for state expenses.

A careful examination of the constitution and by-laws of the Illinois State Medical Society will establish the following propositions: (1) The state society simply consists of the aggregation of all the county societies in the state which have been chartered or recognized by the House of Delegates. (2) There is no membership in the state society outside of the membership of the county societies. (3) The House of Delegates, or the legislative body made up of duly elected representatives of the various component county societies, is, to all intents and purposes, the state society. The general session is a meeting, for scientific purposes, of all the members of the organization in the state (i. e., of the county societies) who are able to attend the annual meetings. (4) There are no state society dues. There is a *per capita* assessment, levied not on the individual member, but on the county society for the purpose of defraying the expenses of the state organization. Since this tax is levied by the representatives of the county societies, it is a voluntary setting apart of the county societies of a certain portion of their dues for general state expenses. It follows from this, therefore, that the state assessment, or as some members and even some county secretaries persist in erroneously designating it, the "state dues," is a part of the county societies' dues, and that no member is in good standing with his county society unless the entire amount, including the state assessment, is paid to the county secretary.

It is essential for a clear understanding in this matter that members get away from the idea that the payment of the state assessment has anything to do with attendance at state meetings. Members occasionally make the statement that they "did not pay any state dues last year because they did not attend the state meeting." The state assessment is not for the purpose of paying the expenses of the state meeting, nor has it anything to do with it. It is for the purpose of carrying on the work of the state organization, which goes on twelve months out of the year, entirely regardless of the annual session. It would be just as reasonable for a citizen to refuse to pay his taxes on the grounds that he had not been in Springfield for two years. A thorough understanding of these underlying principles will greatly facilitate the work of the officers of both county and state societies and will also increase efficiency of organization throughout the state.

SOME METHODS OF ADVERTISING.

There recently came to the office of *THE JOURNAL* a letter from a physician in a state more than five hundred miles from Illinois, which read as follows:

"Dear Doctor:—Will you have the kindness to insert the item below in the columns of your journal? Thanking you in advance for your courtesy in the matter, I am,

The "item below" announced the appointment of the writer of the letter as professor in a postgraduate school to fill a vacancy caused by the death of the former incumbent. In view of the discussion and interest recently aroused by the consideration of different forms and kinds of advertising, one is led to speculate regarding the motives and objects of the writer of the above letter. It is evident from its character that it was sent to a large number of medical journals. The most charitable view to take of the writer's motives is, that he was actuated by a desire to supply the journals of the country in general, and *THE ILLINOIS MEDICAL JOURNAL* in particular, with a valuable news item. This is certainly commendable, but it is also a question whether the appointment of an individual to fill a chair in a school of more or less influence and standing, located a thousand miles from the seat of publication of this journal, is of particular interest to its readers. It is also possible that the writer was animated by philanthropic motives, in that he surmised that the announcement of the appointment might be a means of increasing the standing and prestige of the school in question. If such is the case, the writer certainly showed a considerable amount of disinterestedness and unselfishness in circulating the item at his own expense. The third and only alternative supposition is that the writer desired the fact of his appointment circulated as widely as possible for the purpose of self-advancement and advertising. While we would hesitate to adopt this explanation, we are forced to admit, reluctantly, that such things have been known to occur in the medical profession heretofore. We are unable to understand just what importance such an item could have to the readers of *THE ILLINOIS MEDICAL JOURNAL*. We are also unable to under-

stand why a journal supported and published by the organized profession in Illinois should be expected to devote space in its columns to items regarding newly-appointed professors in far distant states; however important such an item might seem to the individual concerned.

If this were an isolated instance, it would hardly be worthy of notice. Unfortunately, it is not. In spite of the frequent expressions on the part of the profession, both as individuals and through the resolutions of organized bodies, there are to be found, in every community, physicians who are constantly seeking notoriety through frequent newspaper items and notices, which appear in such number as to lead the uncharitable to assert that their appearance is not entirely without the consent of the persons interested. When men who occupy positions of influence and standing in the profession and who are conspicuous as teachers and instructors in medical colleges do not hesitate to send out, over their personal signatures requests for the publication of items similar to the one quoted above, what can we expect will be the effect of such an example upon the physician in the small town or city, who sees no reason why he should not get the benefit of a little advertising by having notices regarding his patients and his operations inserted in the local papers? Are the advantages of journal items to be limited entirely to professors in medical colleges? Shall not the obscure, general practitioner in the country district occasionally profit by the judicious use of printer's ink? Is not sauce for the professorial goose also legitimate sauce for the general practitioner gander? Why should the little man be condemned for doing what the big man does with impunity?

We trust the above notice will be satisfactory to the gentleman who requested space for the insertion of an item. He asked for room in the news department. We have given him the much greater distinction of editorial mention.

THE COLLECTION OF VITAL STATISTICS AN IMPORTANT WORK.

The Department of Commerce and Labor of the General Government, which has charge of the compilation of the census, is sending out, from the Division of Vital Statistics, letters to the medical journals of the country regarding the advancement of vital statistics. This matter, of great importance to the profession and the general public, has been, for years past, one of special concern to the organized profession. Over fifty years ago the American Medical Association appointed a standing committee on this subject. The accumulation of reliable and exhaustive data along the lines of health, disease and causes of death was one of the subjects most frequently discussed in the early meetings of the organized profession. The influence of the medical profession in advancing and systematizing collection of vital statistics is recognized by Dr. Cressy L. Wilbur, the chief statistician of the department, in the letter alluded to above. It should be the aim and the privilege of all members of the profession, who are interested in placing the collection of figures regarding health and disease on a reliable and scientific basis, to assist the

Division of Vital Statistics in this work. Dr. Wilbur offers to send copies of the latest pamphlet issued by his bureau, on the extension of the registration area for births and deaths, to any physician or health authorities who desire it. In order that the coöperation of the profession in Illinois may be as general and widespread as possible, every reader of *THE JOURNAL*, and especially every physician occupying the position of health officer in his community, is urged to write to Dr. Wilbur and secure literature and information regarding this important work. Letters or postal cards addressed to Dr. Cressy L. Wilbur, Chief Statistician, Division of Vital Statistics, Department of Commerce and Labor, Washington, D. C., will procure the desired information.

TWO OBJECT LESSONS.

In the September number of *THE JOURNAL* appeared a most interesting article by Dr. J. W. Pettit on the Ottawa Tent Colony. In this number of *THE JOURNAL* appears an article by the Superintendent of the Dunning Tuberculosis Camp. These two camp sanatoria are of special interest to the physicians of the state. They represent not only the most advanced, but also the most hopeful means of dealing with the ravages of tuberculosis. They are valuable not only as places of treatment for the patients who are sent to them, but still more as object lessons to the physicians and the people of the state, of what may be accomplished, in the rational treatment of tuberculosis, by fresh air, sunshine and nourishing food. The belief in the influence of heredity, in the causation and development of tuberculosis, which years ago doomed thousands to an untimely death, on account of infection of parents or older members of the family, has been thoroughly exploded. The later fallacy of the necessity of certain climates and locations for cure has also been dissipated. The profession now knows that there is no reason why tuberculosis should not be treated as successfully in Illinois as in any other state in the Union. It is only necessary to demonstrate this thoroughly to the laity to win their confidence and coöperation. Such institutions as the Ottawa Tent Colony and the Dunning Tuberculosis Camp are of great value as educational institutions alone.

A LITTLE PREACHMENT.

JAMES F. PERCY, M.D.

PRESIDENT OF THE ILLINOIS STATE MEDICAL SOCIETY.
GALESBURG.

In the last issue of *THE JOURNAL*, I made some remarks regarding the Insurance Examination Fees. In this issue, I wish to say something about organization, as it affects the profession in this state. The greatest thing that was ever done for the profession of medicine in this country was when the re-organization committee of the American Medical Association made the county society the unit of medical organization. Be-

fore that time, it was difficult to get the members of the medical profession to take more than a perfunctory interest in the medical society work. In the adequate life of the practitioner of medicine, the sum total of his interest in the work of his fellows can be usually summed up by the reading of three or four papers, and the attendance at about ten yearly meetings of medical societies. The truth of this statement, I believe, applies not alone to men in the country, but to those near the abundant clinical advantages of the large cities as well. If this is true, is it not one of the explanations of the lack of interest in medical society work, not only in the past, but, although to a lesser degree, in the present also? What can any man accomplish, if the sum total of his interest is measured by ten or fifteen days of his life time, spent in the pursuit of any one subject?

There are only two sides to medicine, the practical, from which is derived our living, and the scientific, from which we gain inspiration to make our work something more than drudgery. In the beginning, the larger part of our profession have uppermost in their minds the scientific aspects of the practice of medicine. But when that great law of the survival of the fittest grips us hard, our minds are too often forced into a position where they run most easily when grappling with the problems that concern the bread and butter side of our work. This is no crime; indeed, with the most of us it is a necessity. But the harm comes not only to ourselves, but to the community in which our lot is cast, when, after the fight for existence is decided in our favor, we do not enlarge our point of view, and give more because of what we have previously won.

In my journeys about the state this year, I have been struck by the number of men in the profession who want to change their location. In almost every instance, they are in the class who have won recognition in their communities. They have about passed through the bread and butter stage, and the instinctive feeling, which is expressed in this desire to do more for themselves, their family and the profession, finds an outlet in the desire to move. I believe that, in the majority of instances, this moving is a mistake. To prove that I am right in this, I could cite many instances, did space permit. The time lost in obtaining a new foothold in a, perhaps, more desirable and larger community, the money spent in answering the greater demands usually necessary when taking up one's work in a new field, the wear and tear upon the nervous system of the man who has been used to being busy and forced again to sit and wait as in the beginning of his career, all of these things beat back rather than push forward the physician who attempts it. They could be more profitably exercised in re-developing the opportunities in the field already occupied.

There are acres of diamonds all about us if we had but the necessary experience to recognize them. Not always to be found are acres of diamonds for one's children, in the way of educational advantages, or the larger social sphere for one's wife in the smaller communities, perhaps; but I am speaking now of professional opportunities, and it is on this

basis that the man who loves his profession must finally stand or fall. With transportation so easy and cheap, one's children can easily be given, in neighboring communities, what may be denied them at home, and the same can be said of the social life, as well, for the rest of the family.

Then again, practically every community is improving along social and material lines. It will not be many years before the farming lands of Illinois will average five hundred dollars per acre. This increase in value will bring better roads, trolleys and automobiles, so that the latter days of the man in our profession who has stuck to his field and developed it as it should be developed, can not but be an enviable one.

But the professional and material interests of the profession will never be realized to the fullest measure without organization. Alone, no man can reach the full possibilities of his nature. The fiber of the brain and its consequent capacity for work is the same in every city and country town in this great country of ours. All it needs is development, and this cannot come without exercise, and the quickest and best paying kind of exercise that one can get is mixing with one's fellows. I know a physician, a member of our state society, who twenty years ago paid six per cent. on money borrowed to attend his first meeting of the American Medical Association. That man is one of the tried and true leaders of the profession in this state. I recently met another man, located in a town of seven hundred inhabitants, who had received a fee of five hundred dollars for putting five pounds of flesh on a baby in five weeks. No one else had been able to do it. He did it, and although there was some slight protest on the part of the parents as to the fee, it was paid. This man had always gotten big fees and a big practice, because he does good work and demands good pay for it.

Getting in touch with the man who has done some one thing well can but profit. Indeed, if we would have our eyes and ears open in order to learn where these men are, and then study them as we would a case of typhoid fever, or a fracture under the *x*-ray, we would get as much profit as in the study of disease. The majority of them are in our country societies. It was Emerson who said: "If a man writes a better story, or paints a better picture, or builds a better mouse-trap than his neighbor, though he build his house in the woods, the world will make a beaten path to his door."

But these men are not doing all that they can, or could, for the county societies, either in the way of adding to their membership or to the value of their meetings from a scientific standpoint. There are eight county societies in this state whose presiding officers have not paid their per capita tax to the state society. When the county society is the unit of all things medical in this country, as it now is; when the county society, through the House of Delegates, controls the various state societies, and the American Medical Association as well, it behooves us to get together and make the medical organization of this country the greatest in the world.

THE SPRINGFIELD CONFERENCE ON CHARITIES.

Steps were taken at a conference held in Springfield on October 18 and 19 to elevate the service in Illinois state hospitals for the insane and feeble-minded to a higher level of efficiency. This conference was suggested by his Excellency, the Governor. It was called by and sat under the direction of the State Board of Public Charities. The basis of every suggestion for improvement advanced is a desire to provide better care for each patient. The original purpose was to hold a conference of all superintendents of institutions coming under the jurisdiction of the State Board of Public Charities. But, owing to the magnitude of the work and the diverse character of the three groups of institutions, it was found expedient to limit the scope of the conference to state hospitals caring for the insane and feeble-minded.

After listening to remarks by his Excellency, the Governor, to a basis for discussion, prepared by the State Board of Public Charities, and to papers on appropriate topics, the conference authorized the appointment of committees to take up the various suggestions made and report their findings to an adjourned session of the conference to be held in Springfield early in December. In cases where legislative authority is required, the reports of the committees will be the basis on which bills will be prepared for consideration by the General Assembly this year.

STATEMENT OF IMPROVEMENTS CONTEMPLATED.

Briefly stated, the improvements taken under consideration are: 1. A state psychopathic institute, to be located in one of the hospitals for the insane which is near a large city, with branches of this institute in each hospital for the insane and in the hospital for feeble-minded. The purpose of this institute is to give clinical and pathologic instruction to doctors in the state service and to physicians in general practice.

2. Complete state care of all insane, epileptic and feeble-minded persons, and dependent consumptives, meaning the removal of such persons now in county almshouses to state institutions. This item includes the establishment of a state colony for epileptics and a state sanatorium for consumptives, also free diphtheria antitoxin, provided by the state.

3. General uniformity of service, including a medical superintendent in charge of each hospital, a staff of senior physicians, a staff of internes, a dietest, a superintendent of nurses and a sufficient nursing and attendant service taught in a compulsory training school, on the medical side, and a steward, or a business manager, under the medical superintendent, on the business side.

4. Hydrotherapeutic treatment in a psychopathic pavilion for acute hopeful cases of insanity sent in on temporary commitments; more ample hospital facilities for physically sick insane, and employment and industrial re-education for chronic insane; more recreation for patients; the abolition of mechanical and medicinal restraint as far as possible, and more thorough classification of patients.

5. Uniform and complete medical records.

6. The establishment of uniform grades of service, uniform general rules, and uniform nomenclature of places of employment.

7. Problems of the feeble-minded, especially feeble-minded women of the child-bearing age.

8. Changes in the physical property, including machinery and other equipment, to provide adequate ventilation, safe and sanitary quarters for patients, and more economical administration.

9. Consideration of changes necessitated by conditions at the Joliet Prison.

THOSE WHO ATTENDED THE CONFERENCE.

The following is a list of those attending the conference: His Excellency, the Honorable Charles S. Deneen; Dr. W. L. Athon, Superintendent Southern Hospital for the Insane; Dr. Frank Billings, President of the Board of State Commissioners of Public Charities; Mrs. Clara P. Bourland, member of the Board of State Commissioners of Public Charities; Mr. Ernest P. Bicknell, Superintendent Chicago Bureau of Charities; Dr. Daniel R. Brower, of Chicago; Dr. H. B. Carriel, Superintendent Central Hospital for the Insane; Mr. Thomas J. Clark, President Board of Trustees Asylum for Insane Criminals; Dr. Frank S. Churchill, of Chicago; Dr. Richard Dewey, Physician in Charge Milwaukee Sanitarium, and formerly superintendent at the Eastern Hospital for the Insane; Dr. Haim I. Davis, County Physician, in charge of the Cook County Detention Hospital; Dr. William A. Evans, of Chicago; Dr. James L. Greene, Superintendent Eastern Hospital for the Insane; Mr. Frank W. Gould, President Board of Trustees of the Western Hospital for the Insane; Mr. William C. Graves, Secretary Board of State Commissioners of Public Charities; Dr. Emil G. Hirsch, member of the Board of State Commissioners of Public Charities; Dr. John T. McAnally, member of the Board of State Commissioners of Public Charities; Mr. W. B. Moulton, President State Civil Service Commission; Mr. Joseph C. Mason, Secretary State Civil Service Commission; Dr. V. H. Podstata, Superintendent Northern Hospital for the Insane; Mr. Robert Rew, President Board of Trustees Northern Hospital for the Insane; Dr. Walter E. Songer, Superintendent Asylum for Insane Criminals; Dr. W. E. Taylor, Superintendent Western Hospital for the Insane; Dr. C. B. Taylor, Superintendent Asylum for Feeble-minded Children; Mr. Charles M. Tinney, manager sales department of the Board of Prison Industries; Dr. George W. Webster, President State Board of Health; Mr. James A. Willoughby, member State Civil Service Commission; Dr. P. M. Woodworth, member Board of Trustees of the Northern Hospital for the Insane; Dr. O. C. Willhite, general superintendent Cook County Institutions at Dunning; Mr. D. E. Wood, treasurer Northern Hospital for the Insane; Dr. George A. Zeller, superintendent Asylum for Incurable Insane; Mr. W. Carby Zimmerman, state architect. Letters of regret were received from Dr. Charles R. Henderson, professor of sociology in the University of Chicago; the Honorable Edward J. Brundage, president of the Board of Commissioners of Cook County; Dr. Hugh T. Patrick, of Chicago, and Dr. James A. Egan, secretary State Board of Health.

THE PROGRAM.

Thursday, October 18, 2:00 P. M.

- Purpose of the Conference.....His Excellency, the Governor
 State Board of Charities' Suggestions.....
Dr. Frank Billings, President State Board of Charities
 Civil Service Uniformity.....
Hon. W. B. Moulton, Chairman Civil Service Commission
 Buildings and Physical Equipment.....
M. W. Carby's Zimmerman, State Architect
 Consumptives in Prisons, Asylums, Jails and in the Community at
 Large
 Dr. Wm. A. Evans, Professor of Pathology, University of Illinois
 Should Illinois Furnish to Its Citizens Free Diphtheria Anti-
 toxin?.....Dr. George W. Webster, Presi-
 dent State Board of Health and President Chicago Medical Society

Thursday, October 18, 8:00 P. M.

- The Medical Administration of Public Hospitals for the Insane..
Dr. Daniel R. Brower
 Nursing and Attendant Service and Compulsory Training Schools..
 Dr. V. H. Podstate, Superintendent Northern Hospital for the Insane
 Proved Value of Hydrotherapeutic Treatment for Cases of Acute
 Insanity (Illustrated).....Dr. Richard Dewey
 Employment and Recreation for Chronic Insane.....
 Dr. W. E. Taylor, Superintendent Western Hospital for the Insane
 Mechanical and Medicinal Restraint.....
 Dr. George A. Zeller, Superintendent Asylum for Incurable Insane
 Pay Patients in Public Hospitals for the Insane.....
Mrs. Clara P. Bourland, Member State Board of Charities
 The Proposed State Psychopathic Institute.....Dr. Frank Billings
 Need of Uniform and Complete Medical Records.....
Dr. T. J. McAnally, Member State Board of Charities
 Dr. O. C. Willhite, Superintendent Cook Co. Institutions at Dunning
 The Care and Treatment of Epileptics.....Dr. Frank S. Churchill
 Surgery Among the Insane.....Dr. James L. Greene,
 Superintendent Eastern Hospital for the Insane, Kankakee
 Psychopathic Wards and Temporary Commitments Thereto.....
 Dr. H. B. Carriel, Superintendent Central Hospital for the Insane

Friday, October 19, 1:00 P. M.

Business session and discussion of the general topic: "What System of Charity Administration Is Best Suited to the Needs of Illinois?"

COUNTY AND DISTRICT SOCIETIES

BUREAU COUNTY.

The twenty-fifth semi-annual meeting of the Bureau County Medical Society was held in the City Hall at Princeton, Ill., Thursday, Nov. 15, 1906, with Dr. C. C. Scott in the chair. Members present: A. E. Owens, W. C. Griswold, J. F. Taylor, A. H. Flickwir, C. C. Barrett, M. H. Blackburn, L. H. Wiman, C. C. Scott, C. A. Palmer, J. L. McLean, B. F. Landis, H. M. Owens, W. E. Howard, M. N. Guernsey, William Kellar, O. J. Flint, W. M. Kaull. Visitors: J. F. Percy of Galesburg, Ill.; E. P. Cook of Mendota; Charles Owens, C. C. Hunt and Dr. Lasarze, of Dixon; Dr. Harris and H. R. Hess of Whitefield.

Minutes of preceding meeting were read and approved.

Application for membership was made by Howard R. Hess of Whitefield, and on motion, was favorably acted on. The temporary appointment of Dr. C. A. Palmer by President White to represent this county on the Medico-Legal Committee was made permanent.

Dr. M. N. Guernsey read an excellent paper on Eclampsia, which brought out an interesting discussion. Dr. Blackburn thought elimination and supportive treatment the essentials. He used morphin, pilocarpin, veratrum viride and diaphoretics. Dr. Griswold deprecated the use of veratrum viride, and stated that a hypodermic syringe full of saturated solution of Epsom salts, given hypodermically, acted as an excellent cathartic. He advocated its use in these cases. Dr. A. E. Owens thought phlebotomy and injection of normal saline solution good treatment, and believed these cases were tolerant to veratrum viride and half-grain doses of morphin, repeated every two hours, as needed. He believed morphin to be better than chloroform. He was doubtful of the value of diaphoresis and did not think that much of the poison was eliminated through the skin, and warned against the use of pilocarpin, because of its depressing effect on the heart. Dr. Palmer also thought the use of pilocarpin dangerous, and suggested that the use of morphin would tend to interfere with an elimination which is considered essential. He also questioned the value of the hypodermic use of magnesium sulphate as a cathartic. Dr. Percy considered the use of strophanthus of value as a heart tonic, and said that surgeons had, to a large extent, given up the use of stychnia as a heart tonic, and believed there was no question that its use was harmful in cases of shock. He believed that phlebotomy and injection of normal salt solutions were of value, but believed the time was coming when the proper treatment will be considered to be the emptying of the uterus by Cesarean section. Dr. Charles Owens believed that prophylactic treatment was the most important treatment and feared that we did not always watch our cases close enough during pregnancy.

Dr. A. H. Flickwir presented a paper on Neurasthenia and Hysteria in Country Practice. Before beginning a discussion of this paper Dr. Percy suggested that as his paper covered much the same ground, they be discussed together. Dr. Percy then read an excellent paper on the Borderland of Insanity. This paper so completely covered the ground that there was no room for discussion.

Dr. Cook then presented some very interesting specimens and reported a case of Tubal Pregnancy, Operation and Recovery, and a case of Ovariectomy at 90 Years. He brought out the interesting fact that his father, 45 years ago, in 1861, performed an operation for rupture in extrauterine pregnancy with recovery, which was one of the first cases so operated on in the West. Dr. Charles Owens of Dixon, Ill., read a paper on Prostatectomy by the Perineal Route. This also brought out a very interesting discussion.

The following officers were elected for the coming year: C. C. Scott, president;

A. S. Rummell, first vice-president; J. F. Taylor, second vice-president; O. J. Flint, secretary and treasurer.

Dr. A. E. Owens stated that of the 25 meetings of the Society, this was the best and most instructive, and suggested that the Society give a vote of thanks to the visiting physicians who had offered so much for the benefit of the Society. The meeting then adjourned.

O. J. FLINT, *Secretary*.

CHAMPAIGN COUNTY.

The Champaign County Medical Society met in regular session Thursday, November 8, at Champaign. It was the first meeting under the revised constitution and by-laws, which provide for meetings held on the second Thursday of each month, except July and August, when no meetings will be held. Dr. H. E. Cushing read a very well prepared paper on Fracture of the Neck of the Femur, in which he discussed the value of the various treatments.

The most important business transacted was the adoption of the following resolutions:

WHEREAS, Certain old-line life insurance companies have underestimated the importance and value of the work done by their local examiners and have reduced the fee for such work; therefore, be it

Resolved, That the members of the Champaign County Medical Society, recognizing that the examination of every applicant for life insurance should be made with the same care and thoroughness, decline to make an examination for any old-line life insurance company for less than five dollars; and, be it further

Resolved, That this resolution should take effect and be binding on the members of this Society on and after Dec. 1, 1906; and, be it further

Resolved, That the Secretary is to furnish each member with ten printed copies of this resolution and that each member must notify the companies for which he is local examiner.

C. M. CRAIG, *President*.

C. D. GULICK, *Secretary*.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

The first meeting of the Chicago Medical Society for the year was a joint meeting of the main society and the Chicago Gynecological Society, held October 10. A full report of this meeting will be found in *Surgery and Gynecology and Obstetrics* for January, 1907.

A regular meeting was held Oct. 17, 1906, with the president, Dr. George W. Webster, in the chair. Dr. William Hessert read a paper entitled

HEMORRHAGE FROM THE STUMP, FOLLOWING APPENDECTOMY, WITH A REPORT OF THREE CASES.

WILLIAM HESSERT, M.D.

CHICAGO.

(*Author's Abstract.*)

The author has had the rather unusual experience of three cases of hemorrhage into the colon, following the operation of appendectomy. Two of the cases were interval operations, in the other case the appendix was only moderately inflamed. The technic followed was the widely practiced one of clamping the appendix at its base, cutting away the distal portion flush with the forceps, inserting a purse string suture around the base, releasing the forceps, and inverting the stump while the purse string was tied. The author deems it timely to call attention to this matter because some of the most popular methods make no provision for the prevention of postoperative hemorrhage. If a little variation in technic may be the cause of losing the patient from hemorrhage, as happened to the author, then

is it not timely to sound a warning, so that every operator, in every case, will make some provision by suture, ligature or cautery, making postoperative bleeding an impossibility?

CASE 1.—Female, aged 13 years; operated during first twenty-four hours of a mild attack. Mesentery ligated with catgut and severed. Appendix clamped with artery forceps at its base and cut away. Purse string suture around base; appendix inverted and purse string tied. Over this was another row of Lembert sutures. Patient in fine condition for twelve hours. Then the blood escaped per rectum, with signs of acute anemia and moderate shock. She lost some blood for two days, when hemorrhage ceased and patient finally made a complete recovery.

CASE 2.—Female, aged 25 years. In the course of a pelvic operation of short duration, the appendix was found to be five inches long and to contain two large enteroliths. Its extirpation was deemed justifiable and the organ was removed by the method used in Case 1. There was no history of a previous attack of appendicitis. Patient did nicely for about twelve hours, when she went into a profound relapse, and, shortly after, passed large amounts of blood per rectum. The hemorrhage was severe, and although she rallied several times, she finally died in thirty-six hours, in spite of the most heroic efforts to save her life.

CASE 3.—Male, aged 23 years. Interval operation. Appendix situated entirely posteriorly to cecum, with no mesoappendix. Cecum pulled up and the peritoneum covering the appendix incised and the organ liberated. Purse string suture around base, and following the suggestion of Harris, an extra loop was passed around what corresponds with the cecoappendical angle, then an extra row of Lembert sutures. As in the previous cases, about twelve hours after operation, blood appeared per rectum, and showed itself for about thirty-six hours. There was some shock and clinical signs of acute anemia. Recovery.

In order to understand the occurrence of hemorrhage, one must first consider the arterial distribution of this region. The anterior and posterior cecal and the appendicular arteries supply this region. The cecal and appendicular arteries anastomose, but the line of anastomosis is variously situated. In 62 per cent. the line is well up on the cecum; in 32 per cent. it is at the cecoappendicular junction; in 5 per cent. the cecal vessels pass into the base of the appendix and here the blood current is towards the tip of the organ. Ligation of the appendicular artery will, in the first two types, probably control bleeding from the cut end of stump. In the third type, however, where the base of appendix is supplied by the cecal, and not by the appendicular vessels, hemorrhage is likely to occur, uninfluenced by previous ligation of the appendicular artery.

Knowing that postoperative hemorrhage, even to a fatal degree, is a possible sequel of some of the most popular methods of amputation of the appendix, it seems justifiable to point to this danger and adopt measures for its absolute prevention. One of the best methods is to amputate the appendix by means of the thermo-cautery or cautery clamp. One does not always have the necessary appliances at hand, however. Following this, the best method is the following, viz.: ligate the appendicular artery and cut away the mesoappendix; in postcecal or atypical cases, liberate the appendix by whatever method fits the individual case. Clamp two heavy artery forceps on the base of the appendix. These forceps crush out the mucosa, leaving mostly fibrous connective tissue in the grasp of the instrument. Remove the forceps nearest the cecum and tie a fine catgut ligature around the crushed base. Cut away the appendix close to the ligature, the second forceps preventing the escape of contents from the ablated organ. Bury the stump with a few rows of Lembert sutures. Should any vestige of mucous membrane be still visible distal to the ligature, it can readily be removed or cauterized with carbolic acid, before proceeding to bury the stump. This method is safe as regards infection, and absolutely sure in preventing such a deplorable sequel as postoperative bleeding. No one should ever operate, without bearing in mind, in every case, the possibility of hemorrhage, and adopting means for its prevention.

DISCUSSION.

Dr. M. L. Harris:—The method of treating the appendix has, for a little thing, given rise to as much discussion as any other subject. It is now more than ten

years since Dawbarn first presented the purse-string suture and the invagination of the stump method. It was so simple that I adopted it at once and have used it ever since. It was along about that time, in talking with the late Dr. Fenger regarding the method of treating the stump, that this method was mentioned. He said he had never used it, because he was afraid of hemorrhage from the end of the appendix. At that time I had never seen hemorrhage from the stump and no cases had been reported. But, bearing in mind Dr. Fenger's remark, I began to pay a little more attention to the appendix, after I had ligated the mesenteriolum. I noticed that after ordinary ligation of the appendicular artery or of the mesenteriolum, after cutting the appendix, in a few cases bleeding continued from the side of the appendix, especially toward the mesenteriolum, and I found, in the majority of cases, that this hemorrhage came from a small branch of the appendicular artery which was given off near the base of the appendix, and followed closely in the wall of the appendix, so that when the appendicular artery was ligated this little branch failed to be included in the ligature. In order to prevent a possible hemorrhage from this source in placing the purse-string suture, pass a complete loop in the cecum just at the base of the appendix at the free angle where the mesenteriolum is given off so as to include this small branch, should it be present. This procedure effectually guards against hemorrhage from this source. Very rarely oozing may occur from the end of the stump, from small vessels in the submucosa which anastomose with similar small branches which pass into the base of the appendix from the cecum. In this event, which is very unusual, a couple of fine catgut sutures passed through the mucosa at the end of the stump controls the oozing perfectly. One should never invaginate a stump of the appendix until sure that all bleeding is stopped. I have treated the stump in this manner hundreds of times and have never had hemorrhage follow.

Dr. A. J. Ochsner:—There can be no doubt but that hemorrhage occasionally occurs unless the precautions which Dr. Hessert has suggested as a regular method be employed, or the methods which Dr. Harris has just illustrated be adopted. It matters very little what method we select in disposing of the stump, so long as it provides against hemorrhage. The results are equally good, whether one simply ligates the appendix and inverts it; or excises it and sutures it; or follows the Dawbarn method; or simply ligates and eauterizes it without burying it. The total results seem to have been about the same. Many of the most experienced surgeons follow each one of these various methods. My personal preference is to practice the method indicated by Dr. Harris, that is, the Dawbarn method, crushing the appendix then inserting the suture in the manner illustrated by Dr. Harris.

For a number of years, I regularly ligated the appendix, and then inverted it, without crushing, but for nearly seven years I have followed the Dawbarn method and the Harris loop, and, in about one per cent. of all cases, I have passed a ligature about the crushed stump, selecting naturally such cases as appear to be somewhat unsafe. During this period, I have removed over two thousand appendices, without a single case of postoperative hemorrhage from the stump, showing, to my satisfaction, at least, that all that is necessary in the matter is to have our attention directed to the possibility of hemorrhage. If we bear in mind in removing the appendix, that there is a possibility of hemorrhage, I believe we can remove any number of appendices without having hemorrhage. If there is doubt in any given case, the ligature, applied in the manner described by Dr. Harris or Dr. Hessert, will remove the possibility of hemorrhage. If any surgeon, therefore, is in doubt, the application of the ligature in every case can not possibly do any harm, and the little time that it consumes does not amount to very much, so far as the patient is concerned.

Dr. E. Wyllys Andrews:—The point made by Dr. Hessert is of serious importance. I have not had any dangerous hemorrhages from stumps that were closed by plastic methods in clean cases; but I have seen slight hemorrhages, which were stopped quickly on the operating table, and it is obvious that if this surgical work is done blindly, as, for instance, through small incisions, a dangerous hemorrhage may immediately occur. Cases where such an accident occurred

are credibly reported. I recall three cases, in which hemorrhage took place later than at the operating table. In two cases fatal hemorrhage followed, probably from a vessel at or near the lumen of the appendix, at or about the time of the removal of the first gauze packing. Both of these cases occurred in my hospital practice. One of them was a patient of Dr. McGaughey's and, at first, there were no dangerous symptoms, but, shortly after an interne had removed some gauze strips, the hemorrhage took place. There was an abscess and perforation of the appendix in that case. The other was a two weeks' old case, also with gauze drainage. The third case was in the practice of Dr. Thomas, of this city, and myself, a case of perforation of the appendix which had not been operated on. The patient was being treated by the Ochsner method, and was rapidly improving after a discharge of pus into the colon, so that it was not necessary to drain it through an incision. While the patient seemed to be improving rapidly, he suddenly collapsed, followed by rapid death. Dr. Thomas secured an autopsy, which disclosed a perforation near the base of the appendix. There was a secondary hemorrhage into the cavity and into the colon, from which the patient died.

One method of removing the appendix is by shelling out its inner coats and leaving its outer or peritoneal coverings *in situ*. This leaves the vessels uncut, also the adhesions. Doubtless many surgeons have used this method. It is excellent in cases in which the mesenterium is matted down and shortened, making it difficult to ligate it. I can recommend it as an easy solution of the adhesion problem. Whenever the adhesions look dense and dangerous to separate, I leave this and enucleate the musculo-mucous tube, which is always easy.

Dr. D. W. Graham:—I have had two cases of serious hemorrhage following appendectomy. In one the lower abdomen gradually filled up with blood clot, and, at the end of 24 hours after the operation, the wound was reopened and enlarged and the blood removed. The source of the bleeding was found to be an omental vein. It was one of those cases in which the inflamed appendix was superficial and wrapped up in the free end of the omentum. Undoubtedly, the vein had been torn in separating the appendix from its omental bed, but the rent had not been discovered or suspected at the time. The other was one of acute suppuration, deeply seated. The mesentery of the appendix was ligated *en masse* and the appendix itself was tied off at the base without any attempt to invert it or cover it in. Rubber tubing was used for drainage, but no gauze. The tube was shortened the second day and entirely removed soon after. In clearing out the clots a catgut ligature, still tied, was found, which seemed to be the one I had placed around the base of the appendix, though it may have been the other one. It had come away by sloughing and a true secondary hemorrhage had followed, of that type in which the clot in the lumen of the vessel breaks down in the presence of pus. As there is no blood vessel concerned in the ordinary operation for appendicitis large enough to give rise to a serious, sudden hemorrhage, my conclusion was that blood had been accumulating for some hours within the abdomen and was finally forced out through the wound, thus giving the appearance of a sudden profuse hemorrhage. I believe Dr. Hessert in his paper makes no reference to either of these types of hemorrhages I have mentioned. To me, the easiest, simplest, and best way of treating the base of the appendix is to cut it off on a level with the surface of the cecum and then close the opening with Czerny-Lembert sutures, as we would in a bullet wound. This method is not applicable to all cases; only to those in which the parts are easily accessible or can be brought to, or into the wound.

Dr. Daniel N. Eisendrath:—I tried to pay particular attention to the class of cases to which Dr. Hessert has referred, and especially since reading the article on the anatomy of the appendix in Kelly's book, I have noted particularly the distribution of the cecal vessels, to which Dr. Hessert has called our attention, and which, in all probability, was the cause of the fatal hemorrhage in his cases. It is something which we can observe in nearly every case and possibly may be able to avoid. These vessels can be plainly seen in the majority of cases traversing the ileocecal fold, passing over to the base of the appendix from the cecum.

In such cases, avoid puncturing these vessels, in ligating the mesoappendix. There is one point to which enough attention has not been paid. If we take, for instance, a cross-section of the appendix, showing the principal arterial supply of the appendix, we will find that the vessels penetrate it at right angles to its long axis. In watching inexperienced operators, I find it is their custom to include only a portion of the serous coat in the purse-string ligature. An important point in preventing hemorrhage is, if possible, to make the purse-string suture deep enough to enter the submucous coat. We get a peculiar fibrinous resistance, which is characteristic of both the submucous and muscular coats. In this way you catch all of the vessels.

In a recent case, I observed this anomalous artery, of which Dr. Hessert has spoken. After the stump was cauterized with carbolic acid, and had been clamped to see if there was any further bleeding, I noticed a little oozing from the submucous layer and inserted a catgut ligature in the side of the peritoneal cuff before inverting it. I believe an important point is to go in deep enough to the submucous layer.

Dr. A. E. Halstead:—I have had one case of severe hemorrhage after appendectomy, and, in that case, I believe the hemorrhage did not come from the stump, but from a vein. Many times, in passing a purse-string suture, we may puncture a large vein and have quite a large hematoma form, underneath the peritoneum. This is difficult to avoid, in some cases, where the veins are large and unusually numerous.

The method I practice in dealing with the stump is practically the same as that outlined by Dr. Harris. A point I would emphasize is, that in all cases, the ligature should be passed around the stump. We should not trust to crushing the stump in controlling hemorrhage. If the ligature is passed through the base of the appendix, it can not slip, and it is a valuable means not only of controlling hemorrhage, but at the same time of controlling the lumen of the appendix. The purse-string suture should be of linen or silk. I have had one fatal case, following the untying of a catgut ligature, as demonstrated postmortem. The patient was a child. Forty hours after operation, the child was given a dose of castor oil, shortly after which there were symptoms of peritonitis, and, inside of twenty-eight hours, the child died of general peritonitis. The postmortem examination revealed the fact that the ligature had become untied.

Dr. D. A. K. Steele:—I have been fortunate not to have seen, in my own operative work, any cases of hemorrhage following appendectomy. But they do occasionally occur. The method I have followed has varied as we have progressed in the technic of the operation, first doing the cuff operation, always folding back the cuff, tying the stump, and bringing the cuff over the Lembert sutures, then, a little later, doing the crushing operation, crushing the base and inverting it with purse-string suture, tying first, then inverting and burying the purse-string suture, first with silk, and later with catgut. In operating, I have followed either that method or the more recent one of cutting off the appendix, having the cuff or base crushed, and then with circular purse-string suture perforating all of the coats of the vessel with the first purse-string suture, tying it tightly with No. 2 catgut, and using No. 1, smaller, finer, for the second purse-string suture, the second suture simply taking in the peritoneal layers. I believe this method was first described by Dr. Charles Davison, of this city. My results have been excellent by this method. The essential points in the operation have been brought out, one of which is that the incision should be large enough to see what we are doing. We should not operate through too small an opening, but we should be able to bring the parts we are operating on to the surface, so that we can see how to apply the ligature, and the perfect occlusion of the appendix stump. We should further see that no raw surface is left, and no vessel on the surface which is not included in the ligature.

Dr. William Hessert (closing the discussion):—I have tried the method that was first used by Dr. Harris, but still believe that in those cases of postcecal situation of the appendix, where the blood supply is atypical, where there is a distinct mesoappendix, the Harris method is hardly the safe one to adopt, and I feel

safer, after operation, when I know that the base of the appendix has been crushed and ligated, knowing that the danger of infection from the stump is slight, and that the danger of hemorrhage is absolutely done away with.

REMARKS ON A FEW DISORDERS OF SLEEP.

HUGH T. PATRICK, M.D.

CHICAGO.

(Abstract.)

The first disorder described has been called nocturnal palsy, night numbness, sleep numbness, waking numbness and acroparesthesia nocturna. The patient awakens in the night, with one or more extremity numb, tingling and more or less paralyzed. This paralysis may be complete, but it is of short duration. After some minutes of rubbing, slapping, shaking, etc., normal sensation and motion return and the patient is able to go to sleep again. When the trouble is hemiplegic in distribution, it very closely simulates an apoplectic attack without loss of consciousness and may seriously frighten the patient, as well as give considerable concern to the medical attendants. The causes of this disorder, approximately in the order of their importance, are neurasthenia and general nervousness, malnutrition and general debility, the menopause, rheumatism, cold and wet, anemia, arteriosclerosis, hysteria, tobacco, gastrointestinal disorder, gout, Bright's disease and diabetes. Dr. Hartung informs the author that he has known of one case caused by pregnancy.

The next disorder considered was what the author called painful awakenings. The patient awakens suddenly, with a feeling of intense apprehension or panic, as if something dreadful were about to happen or had just happened. There is apt to be palpitation, tachypnea, generalized tremor or, more frequently, a sensation of trembling without visible tremor, sometimes cold perspiration and a feeling of great prostration. As nearly as may be ascertained, these attacks have no relation to nightmare or bad dreams. They occur principally in the course of functional nervous disease and, although most distressing, not to say alarming to the patient, are entirely innocuous, and nearly always disappear with successful treatment of the general nervous condition. However, sometimes heart disease, Bright's disease, arteriosclerosis or adenoids stand in a causal relation to the disorder.

The author then described different types of what he ventured to call indormescent shocks. They are so called because they occur just as the patient is falling asleep or immediately after. They may be divided into motor and sensory, although sometimes the two are combined in the same patient or in the same shock. In a very mild degree, the motor shock is familiar to everyone, simply consisting of a sharp muscular start or jerk about the time one is falling asleep. The starts in this degree may be called physiological, as nearly every person has experienced them, but they sometimes reach an intensity which makes them distinctly pathological. In such a case, the sudden muscular contraction may be so violent and so generalized as literally to throw the patient into the air and turn him over in bed, and in some cases, these jerks may be repeated ten or twenty times before the patient finally passes into a sound sleep. The sensory shocks are very apt to be related to the special senses. A typical case was that of a neurasthenic patient, who was awakened by what seemed to be the discharge of a pistol inside of his head. He was conscious of a tremendous crash, like an explosion, and, at the same time, apparently saw a vivid flash of light. He sprang from the bed, was terribly frightened, sat up the rest of the night and, for weeks thereafter, retired with great timidity, lest there should be a recurrence of the phenomenon. Another patient, a middle aged woman, had a sensation of having received a violent blow on the head and she felt certain that someone had struck her such a blow. In intense agony, she waited for the second, which she felt would follow instantly, but, after a time, realized that it was purely a sensation and that she had received no bodily harm. Still another patient was suddenly awakened by what seemed to be a great flash of light, and another had a sudden sensation in the epigastrium, as if he had received a violent blow in that region.

A neurasthenic and hypochondriacal gentleman, past middle age, was several times wakened by a sound which he likened to a violent and sudden grinding together of two stones, the intensity of the sensation being sufficient to constitute a real pain.

Other instances were related, in all of which the disturbance was sufficient to concern, if not greatly alarm the patient, but the author has never known this particular disturbance to be a symptom of organic disease. The disorder of sleep always disappeared with the disappearance of the nervousness and a return to good general health.

DISCUSSION.

Dr. D'Orsay Hecht:—I did not expect to be called upon, and am but poorly prepared to discuss Dr. Patrick's remarks, but he has given such an exact and full version of a few of these sleep disorders, as to leave little or nothing to discuss. While an enormous amount of study has been applied to problems relating to the quantity of sleep, all too little attention has been accorded its quality. Insomnia, which in some degree or other, appears to be, owing to our present commercial and social system, a most prevalent affliction, has been investigated with great persistence, chiefly with a view to finding a panacea. The qualitative deficiencies have proven either too subtle or seemed too insignificant to engage the serious attention of clinicians, and so it happens that physicians are first attracted to these phenomena by the fears entertained and expressed by those afflicted. Dr. Patrick put the matter correctly when he said that patients become thoroughly frightened when overwhelmed by these nocturnal sensations and come to regard them as manifestations of some serious organic disease, oftentimes apprehending a fatal termination.

Dr. S. Weir Mitchell, in his original citation of these disorders in 1890, makes no allusions to the "painful awakenings" described to-night, nor would any of the hitherto formulated sensory shocks cover this observation. It would seem, then, that another has been added to the earlier recognized sleep disorders.

Of the acroparasthesias, I have seen none that are in agreement with those referred by the speaker as "nocturnal." The several patients, as I recall them, were all middle aged women, arrived at the menopausal period, whose occupations kept their hands much in water and whose parasthesias were entirely confined to the hands and forearms. Nothnagel's explanation of these parasthesias, on a vasomotor basis, is, I believe, the most reasonable one yet offered. That they must be sharply differentiated from sensory disturbances of cerebral origin and not confounded with the parasthesias of peripheral neuritic type, goes without saying.

Not infrequently these phenomena are wrongly held to be nocturnal types of epilepsy initiated with sensory aura and, then again, these sensory impressions, when characterized by hallucinations and delusions in the *prae-dormitium*, and extending over long periods of time, are wrongly construed as evidence of impending insanity. When once properly estimated by the practitioner, their harmlessness must be frankly emphasized and such reassurances as follow are immensely comforting to the patient, his family and friends.

May I add that Dr. Patrick's choice of the term "*indormescent*" appeals to me as more exact than Mitchell's *prae-* and *post-dormitium* shocks, since, after all, these irregular phenomena arise with impending sleep, during sleep and upon awakening. Sleep, after all, is a very individual thing, and I am glad to have heard Dr. Patrick enunciate in his own inimitable way a few departures from the normal.

Dr. Frank S. Johnson:—The sleep disturbances, so interestingly described by Dr. Patrick, are observed, in some phases, by us all. They seem to me to be due to several causes. The primary or fundamental condition is the increased nervous irritability of which Dr. Patrick spoke. It comprises a tendency to incoördinate an unnatural activity incident to the effects of illness, of auto- or other intoxications, of exhaustion or the effect of injury on the nervous system. The final factor seems to be the withdrawal in sleep of the inhibitory influence exerted by higher brain areas over lower functional centers. Contributing factors may

arise from organic disease or other disturbing conditions. Cases of nocturnal cardiac palpitation may be cited in which the attacks are associated with general tremor and even severe fright upon waking. They occur in nervous individuals, particularly in those who have acquired organic changes in heart or arteries, or who are under some toxic influence; indeed, exciting and predisposing causes seem sometimes inseparable. But for the production of active manifestations sleep is the passive and prerequisite condition; through it is the unreining of restive motor and sensory areas. I have in mind a patient much debilitated by several months of painful illness, requiring the regular administration of morphin for several weeks; when this was withdrawn by gradual dose reduction the patient was in a very unstable nervous condition. He was often aroused from the first stages of sleep by sharp or even violent muscular contractions, often accompanied by an auditory phenomenon, a sense of crashing noise. At the same time he had visual sensations of brilliant flashes of light. This case was an exaggerated instance of profound nutritional disturbance, and the nerve tissue must have been excessively irritable. The explosive discharges sometimes occurred even before consciousness was fully lost in sleep.

Dr. Patrick, in closing the discussion, said:—I agree entirely with Dr. Johnson that these cases occur nearly always in patients in whom there is a disturbance of nutrition; but in studying them carefully and in treating them in various ways and watching the results of treatment, I have come to the conclusion that nutritional disturbances are not the only factors. Nutritional disturbance is not sufficient to explain the symptoms which many of these cases present; there must be, in addition, some functional nervous disorder which I think is not dependent directly upon poor nutrition. This also applies to the toxic cases.

(A) AN EASY METHOD OF EVACUATING THE CONTENTS OF THE STOMACH INTO THE DUODENUM; (B) NORMAL LAVAGE WITHOUT A STOMACH TUBE; (C) RELATED THERAPEUTIC HINTS ON ABDOMINAL GYMNASTICS; (D) DEMONSTRATIONS.

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CHICAGO.

The presence in the stomach of residual chyme or of partially digested food long after the organ should have completed its task and emptied itself by normal peristalsis is frequently a source of more or less discomfort. This may be only an occasional condition through attacks of indigestion incidental to errors in diet; through temporary functional disturbances secondary to psychic influences or through physical exhaustion. It is the rule in chronic hypopepsia, hyperchlorhydria, gastric atony, dilation, gastropnoia, and constitutional causes. Symptomatically, there is a sense of epigastric fullness and discomfort, with or without pain. Acid eruptions of gas or fluids from fermentations of stomach contents often occur. Sudden changes in position or deep palpation of the abdomen may elicit splashing of the fluids in the organ. Wakefulness on retiring, restlessness in sleep, or unpleasant dreams may be experienced. Whenever the individual becomes conscious that the stomach is retaining food beyond the limits ordinarily required for digestion, from whatever cause (pyloric obstruction excepted), relief can be obtained in a few minutes by evacuating the stomach in the normal direction, without loss of nourishment or the disagreeable features of an emesis. This can readily be accomplished, at will, by physical expulsion of the contents through the pylorus into the intestinal canal, where they properly belong.

(A) METHOD OF EVACUATING THE STOMACH.

The following method, which, so far as I am aware, has never been described, will give definite and satisfactory results. The patient is instructed to take the recumbent position upon the right side, in order that the stomach contents may gravitate to the pylorus. While in this position, strong rhythmic contractions of

all the abdominal muscles should be made. To put it tersely, let the patient try to make his "belly button" touch his back-bone. Twenty or thirty such impulses, with the assistance of awakened peristalsis on the part of the stomach itself, will serve to express the contents through the pylorus. If, moreover, the diaphragm be fixed and rendered tense by a deep inhalation and the breath held during a few strong contractions of the abdominal muscles, each prolonged for a few moments, the belated contents will be literally squeezed out through the normal channel, much to the relief of the distressed organ and the immediate comfort of the patient. The knack of doing this little stunt is easily acquired and is well worth knowing. The process is a combination of alternate compression and physiological syphonage. It is a voluntary, reversed emesis, with no disagreeable features or inconvenience. If the condition is not relieved, after a few minutes rest, these movements should be repeated. The desired end can scarcely fail to be accomplished. It will often serve as an antidote for the discomforts of a late supper, effectually bar the nightmare, and put to flight the morning "red raven."

(B) NORMAL LAVAGE WITHOUT A STOMACH TUBE.

It is now quite evident that the same process is applicable for the purposes of stomach lavage, with the advantage of doing away with the very disagreeable introduction of the stomach tube, in all but a limited class of cases, and the attendant choking and retching reflexes, with positive dangers in gastric ulcer. How uncomfortable or even painful the introduction of the tube may be, any one may demonstrate by thrusting one down his own throat and retaining it through a séance. A pint of some suitable alkaline solution, an effervescent one, if agreeable, should be ingested, when the stomach is empty, preferably before breakfast, or even better, before rising from bed. Evacuation into the duodenum is then immediately accomplished, as described above. A more complete cleansing of the mucosa of the stomach is induced by this method than can be done by the tube, because of the vigorous active massage of the organ and the stimulation of normal peristalsis, aided by the solvent properties of the alkaline solution upon the adherent mucous secretions. This easy, comfortable method of lavage, repeated each morning for a definite period, is of the greatest benefit in every condition in which it is indicated, for therapeutic purposes. When constipation exists this alkaline solution may be an effervescent laxative as well.

(C) RELATED THERAPEUTIC HINTS ON ABDOMINAL GYMNASTICS.

Inasmuch as preventive medicine is the acme of our art, it is quite appropriate, in this relation, to describe certain abdominal gymnastic exercises, which may not only be curative, but prophylactic of the conditions to which allusion has just been made. There is a very large class of individuals of sedentary habits among urban populations, whose abdominal walls are more or less flaccid and whose abdominal viscera are torpid, for causes which are not far to seek, chiefly among which are lack of muscular exercise; faulty dress, especially the corset; gestation; obesity and plethora from over indulged appetite, with attendant faulty metabolism and autotoxicity. Five minutes of daily routine attention to a few simple rules of exercise at the bedside, without apparatus or inconvenience, will go a long way, if not all the way, in correcting many functional ills of the abdominal viscera and the prevention of organic ones dependent upon impaired functions.

Many well-to-do people resort to professional massage, more often as a luxury and a fad, perhaps, than for any scientific therapeutic indications. But no amount of passive massage can supply the place of voluntary muscular exercise. It has its appropriate place, to be sure, and does promote muscular, cutaneous and organic circulation; but active, voluntary, systematic exercise only, can increase and maintain the contractile power, resistance and structural growth of muscle fibers. No amount of muscle rubbing and rolling, or pinching and patting could develop even a mediocre amateur athlete. The abdominal muscles and musculature of the gastro-intestinal tract are governed by much the same laws which obtain for the larger skeletal muscles, and the daily active exercise of this group of muscles, in my estimation, is of the highest importance to those whose

calling is a sedentary one, and whose visceral functions are consequently more apt to become impaired.

Before describing a short series of exercises, let us refer to a universal instinctive habit of animals, which rational beings may imitate with the greatest advantage. Observe the first movements of a horse, dog, cow or cat on arising from rest or sleep. Deliberately it proceeds to hump its back and stretch its body fore and aft, putting all its muscles into rigidity. Each set of flexor muscles is placed in strong counter resistance to the corresponding set of extensors, while it yawns, in the meantime, to thoroughly ventilate its lungs. This is a normal, healthful series of exercises, which the animal never omits, if it is allowed its own volition. A routine morning observance of a similar natural exercise should prelude all other activities of the day. We may begin, before rising, by extending the arms and legs rigidly for a few moments under the cover; then, twenty to thirty strong abdominal contractions may be made, while lying on the back, as already described. Now, with the arms folded across the chest, the legs and thighs extended, lift the body to the sitting posture and then lower it slowly to the reclining one. On arising from the bed a few deep inhalations should be taken, after which, stretch the arms over the head, and, while gradually lowering the strongly flexed arms and clenched fists, execute a good wholesome yawn. This is nature's instinctive way of expanding and ventilating all the remote air cells of the lungs. We are now ready for four important movements for the exercise of the abdominal walls and contained viscera, remembering the while to take deep inhalations. First, drop the body to the squatting posture, with the palms touching the floor, then rise quickly to the erect position. Second, with arms akimbo and heels together, rotate the body, now to the right and then to the left, as far as possible in either direction without moving the feet or lower extremities. Third, with arms extended above the head, lean backward and then bend forward, without flexing the knees if possible, until the finger tips touch the floor. Fourth, incline the head to the left shoulder as far as possible, with the left arm crossed behind the back and the right crossed low in front, then reverse to the right side. Each of these movements may be repeated consecutively, ten or twenty times, while breathing deeply at each inspiration. The movements in bed are especially useful for strengthening the abdominal recti muscles, the rotary ones for the oblique, and the bending and squatting movements for the deep active massage of all the abdominal organs.

The importance of the effects of this method of massage on the lymphatic system is not secondary, perhaps, to any other of its resultant benefits, and is inadequately appreciated. The effects on the blood circulation are at once apparent, but there is also a lymph circulation whose canals vastly outnumber the veins of the body. Aside from the large glands of the abdominal cavity, no other territory of the body is so richly endowed with lymphatic vessels and aggregated neural and organic ganglia. This comprehends the lacteals and mesenteric glands, as well as the splanchnic ganglia of the sympathetic system and the special lymphoids of the intestines themselves. All of these are accessible to and readily influenced by the exercises described. Stimulation of function must, of necessity, follow improved venous and lymph circulation in every organ of the abdomen, whether digestive, excretive, secretive, absorptive or neural. Awakened gastrointestinal peristalsis is often evidenced after one of these séances by rifling of gases from the stomach, by the sensation of fluids and gases propelled along the intestinal tract, and not infrequently by an immediate desire for the stool.

A daily observance of such a program as the above, with especial emphasis on the word daily, will put one in excellent trim for breakfast, and its reflex benefits will be felt throughout the affairs of the day. Deeper inhalations will become automatic, vigor will be imparted to the portal circulation; indigestion, faulty metabolism and toxicity will be relieved; hepatic insufficiency remedied, and abdominal obesity reduced. The aphorism of a noted English physician who used to declare that "the best thing for the inside of a man was the outside of a horse," was replete with good philosophy. The exercises outlined are a fairly good imitation of the rocking and jolting motion imparted to the abdominal organs

by horseback riding. After three years experience the author has found this plan to yield better results in appropriate cases than any other routine drug treatment alone can possibly accomplish.

100 State Street.

DISCUSSION.

Dr. Fenton B. Turck:—It is unnecessary for me to discuss this excellent presentation, because the method that has been outlined has been in existence for a great many years. This method of exercise and massage is very ancient, one of the earliest methods we had; and the drinking of water and bicarbonate of soda is also a very old method. However, we all recognize the fact that it is very essential to have some one bring up these old methods at times and invest them with some new features, and this Dr. Burr has tried to do.

Meeting Oct. 24, 1906.

A regular meeting was held Oct. 24, 1906, with the president, Dr. George W. Webster, in the chair. The subject for the evening was a symposium on "Renal Calculi." Papers were read as follows: 1. "Etiology and Symptomatology," by Dr. C. L. Mix. 2. "Roentgen Diagnosis of Nephrolithiasis," by Dr. Max Reichmann. 3. "Medical Treatment," by Dr. Alfred C. Croftan. 4. "Surgical Treatment," by Dr. Arthur Dean Bevan. The discussion on this symposium was opened by Dr. James B. Herrick, and continued by Drs. Arthur R. Elliott, Victor J. Baccus, and Carl Wagner.

DISCUSSION.

Dr. James B. Herrick was asked to open the discussion in the absence of Dr. Frank Billings. Dr. Herrick said:—I know few diseases which, at this time, present greater difficulties in making a positive diagnosis than renal calculus. As Dr. Mix has told us, we not infrequently have patients come to us with indefinite pains in the back, and even after the most careful and painstaking examination we are not able to tell whether or not a calculus is present. So, too, we see patients with paroxysms of pain and it is not possible always to tell whether the pain originates in the kidney or not. We know, too, that the differential diagnosis between gallstone colic and the pain of gastric ulcer and that of renal colic is not always easy. It reads well in the text-books, but in practice we all know that it is many times extremely difficult. Then, again, even though we have located the pain as originating in the kidney, it is difficult, many times, to be sure that the pain and hematuria are associated with, and caused by a renal calculus. It is only by a most painstaking and careful observation and examination of patients that we are able to exclude such diseases as tuberculosis and tumors of the kidney, Dietl's crises, or those obscure cases of so-called essential renal hematurias. Since the use of the *x*-ray, an immense amount of aid in the matter of diagnosis has been furnished us, and, as Dr. Bevan has said, the positive results from the *x*-ray are almost absolutely convincing as to the presence of a stone or stones. I am not quite as optimistic as he, regarding the value of the *x*-ray in excluding stone. In fleshy individuals, in patients with soft uric acid stones, in patients with very small calculi, I can readily see how the *x*-ray fails to reveal them, and in some cases where I have been morally certain that the patient had calculus, the *x*-ray has not shown a calculus, and the diagnosis has only been a presumptive one.

I was glad to hear Dr. Bevan speak of the possibility of error in the interpretation of skiagrams. An instructive case came under my observation not so very long ago, of a middle-aged man, who was treated by his physician for what seemed to be a severe attack of appendicitis, from which he recovered. He went east and had a second attack of severe pain, passed blood and pus in the urine, developed temperature, and was told he had a renal calculus with pyelitis. When he returned the hematuria was present intermittently; pyuria was present, and an *x*-ray examination showed two distinct shadows that seemed either in the lower pole of the kidney or possibly in the ureter. The patient was operated on, I believe, by Dr. Ochsner, and, at the operation, appendicitis was found, with the appendix closely adherent to the ureter. The shadow was thrown by two phlebo-

liths (two stones in the vein). I believe they were the mesenteric veins. Perhaps Dr. Ochsner, who is present, can give us more accurate information. Phleboliths in the veins of the pelvis of women are not so rare, and we can understand how a shadow thrown by these might confuse us as to the presence of stones, particularly in the ureters. The fact should be remembered that cases of appendicitis, with pain and hematuria, may simulate renal colic.

I was glad to hear Dr. Bevan and Dr. Croftan speak rather slightly of certain very refined methods of diagnosis, such as the use of the wax-tipped catheter, and sounding the pelvis for stones, and I include also distension of the pelvis with boric acid solution. It seems to me that these must be scientific refinements, and methods that chiefly show the remarkable manual dexterity of the operator. Occasionally a little rather sharp manipulation of a kidney that contains a calculus will result in the passage of blood in the urine. This might be called diagnostic palpatory hematuria.

Dr. Mix and other speakers have referred to infection of the urinary tract, particularly of the pelvis of the kidney, as a possible factor in the causation of stone. While a good many of the facts along this line have not been definitely proven, there is enough evidence to warrant one in saying that in every case of typhoid fever we should give urotropin. Bacilluria in typhoid occurs in 25 or 30 per cent. of cases, and is a source of danger to those about the patient; and this bacilluria can continue for months and years after the cessation of the fever. But, more than that, the presence of the typhoid germs in the patient's urine, and, presumably, in the pelvis of the kidney as well as in the bladder, may possibly mean the later formation of stone, as Dr. Mix told us, after the analogy of the formation of gallstones. Hence the propriety of giving urotropin during typhoid convalescence as a prophylactic. Dr. Mix also referred to the presence of calculi in connection with and due to neoplasms, and I have wondered whether possibly the equation may not be a reversible one, that is, whether a calculus may not occasionally produce a neoplasm in the same way that gallstones are regarded as irritants, which may lead to the development of new growths. I suppose that a medical man ought to feel out of place in speaking on the subject of renal calculi. I agree with Dr. Croftan when he says that the medical treatment of renal calculi, after the calculi are established, is rather microscopic; and yet we shall always have left a few patients with renal calculi to treat. I think it will be some time before we shall not have some of the surgeons to treat when they have renal calculi. It really gives a medical man a shock to be called in these surgical days to treat a surgeon for gallstone colic. And no less startling is it to see how often the surgeon, under such circumstances, will not take the medical man's advice to have the gallstones removed by the knife. Every once in a while we see a surgeon who advises medical treatment for his colleague, afflicted with renal calculus, and who will hesitate a long time before he advises an operation. All of which goes to show that it is as hard for the surgeon as it is for the physician to take his own medicine or to prescribe for members of his own family or for those near and dear to him.

Dr. Arthur R. Elliott:—I do not think it is necessary for the medical man to enter any disclaimer, when requested to take part in a discussion of the treatment of renal calculi. There is no doubt from a therapeutic standpoint that a case of formed calculi belongs to the surgeon. There is nothing to be accomplished by solvent treatment; but to dismiss a case of well-formed renal calculus as belonging therapeutically to surgery is rather too final. It is to be remembered that surgical treatment in a case of renal calculus is merely an incident, and not an end. After the calculus is removed the patient should return to the physician, because he still remains a potential case of renal calculus. The formation again of calculi in the urinary passages as the result of anomalous urinary conditions which persist after operation is possible in any case which does not receive prophylactic treatment and the case may, recurrently, come under observation for a condition similar to that for which he was operated on.

From a medical standpoint, the aspects of nephrolithiasis which appeal most strongly for discussion are the questions of diagnosis in obscure cases, pathogen-

esis, and the prophylactic treatment. The term "quiescent stone" has been used. I think the term is based upon a misconception. I do not believe there is such a thing as "quiescent stone." Cases without symptoms? Yes, but not cases without signs. Every case of stone, in my experience, has yielded evidence of stone under prolonged observation. Symptoms are, notoriously, an insecure foundation for diagnosis of stones in the kidney. The urine furnishes us a reliable criterion for the foundation of a well-formed suspicion, which is to be verified by the *x*-ray and other accessory means of diagnosis. The pain, as has been referred to by several speakers, is eccentric in its distribution, and may be entirely absent, even in cases where a stone of considerable size is present in the pelvis of the kidney. The pain of renal colic only becomes significant and of value in diagnosis, when it is more or less persistent, when it is influenced by rest and activity, and accompanied by microscopic hematuria, which is also influenced by exercise, etc.

Until recently, in my more limited experience, I shared the belief and confidence in the results of *x*-ray examination, that have been expressed by Dr. Bevan; but, within the last eighteen months, I have been unfortunate enough to have had two cases operated on by surgeons of repute in this city, which were positively diagnosed, both from the urine and by *x*-ray examination by a thoroughly competent radiographer, as instances of renal calculi, in which thorough exploration of the kidney in both cases failed to reveal any stone. There was a well-defined shadow. The differentiation was good. A number of plates were taken of each case, and all of us, the operator, radiographer and myself, diagnosed stone. Blood was present in the urinary sediment in both instances, and pus in one of the cases. One had had two attacks, apparently, of calculus anuria, and the other had had side ache for a number of years, and at least one attack of what was, apparently, typical renal colic; yet thorough exploration of the kidney failed to reveal a stone. I should like to ask Dr. Bevan or some other expert interpreter of radiographs for a probable explanation of these cases.

In Dr. Mix's remarks on the etiology, he inadvertently left out reference to the urinary conditions which cause calculous formations. He referred interestingly to the possibility of bacterial infection being an underlying factor in the formation of stone, but did not refer to the fact that bacterial infection was an inoperative factor except in the presence of certain urinary conditions. Stones will not form unless the urine be appropriate for the precipitation of crystalline elements. Chemically speaking, it is an impossibility for uric acid to form in alkaline urine, whether bacterial infection be present or not.

I was very glad to listen to Dr. Crofton's interesting exposition of the prophylaxis in uric acid calculus. I am sure you must all share my regret that he did not extend his remarks to the prophylactic treatment of other forms of renal calculus. The action of carbonate of lime which he demonstrated so interestingly and, apparently, so conclusively, I have had but little experience with. I treat uric acid formations in a rather old-fashioned way. There is a simple measure, one that emanated from Sir William Robert, which I have adopted with a degree of satisfaction. Sir William Robert says that if we take care of the night urine in cases of uric acid, calculus or gravel formation, the day urine will take care of itself, for the reason that renal drainage is good during the day when the patient is in the upright position, and the urinary activity does not rise high because of the percentage of salts taken at the various meals of the day. Moreover, the consumption of water provides for diluting the urine. These combined factors keep the urine from precipitating uric acid crystals during the day. On the other hand, during the night, the recumbent position results in poor drainage; the urine becomes concentrated, perhaps highly acid, and it is the night urine which precipitates crystals; consequently, I am in the habit of directing patients to take a copious draught of water containing some simple alkali, like citrate or bicarbonate of potassium, at bed time. This will create a diuresis, so that the patient will have to get up toward the middle of the night to relieve the bladder, and he then takes another free draught of some simple alkaline solution, which takes care of the urine for the remainder of the night. This simple precautionary

measure is all that is necessary to keep the urine free from uric acid. In simple cases, it is ordinarily all that is required.

Referring to oxalate of lime calculus, or the precipitation of calcium oxalate in the urine, it is interesting to note that it is usually associated with intestinal malassimilation, and the diagnosis, in a case of oxalate of lime calculi or gravel, should include a thorough investigation of the intestinal canal, because bacterial fermentation will be found and imperfect elimination from the colon, and much value in treatment can be secured by thorough hygiene of the bowel, getting the colon empty, and so regulating the diet as to keep down fermentation. The use of sulphate of magnesium, given in doses of thirty or forty grains during the day, will assist materially toward the control of the precipitation of calcium oxalate.

Cases of phosphaturia are constantly coming under observation, where the urine is alkaline during a large share of the day, precipitating earthy phosphates. Such cases are very apt to form stone, and it will be found on investigation that these patients are usually neurasthenics and have very frequently hyperchlorhydria. A careful gastric diagnosis should be made in such cases, and if hyperchlorhydria exists, it should be treated by appropriate dietetic measures.

I wish to make a plea for careful systematic treatment in the prophylaxis of these cases, not as is so often and much too frequently done, to dismiss the patient with the simple instructions to drink more water and eat less meat, but we should fully investigate each individual case and the underlying factors in each case, and treat them in a thoroughly scientific way.

Dr. Victor J. Baceus:—The technic of nephrotomy described is applicable in the majority of cases. However, in stout fleshy subjects with an abnormally thick lumbar wall, the total delivery of the kidney, under the circumstances, is attended with some danger of tearing the renal vein. One of our best surgeons, operating on such a subject, tore the renal vein. This is a serious accident as a repair may not be possible, or the healing may be complicated by a thrombo-phlebitis or sepsis. Either of these conditions, the ligation of the vein or a thrombosis obstructing its lumen, will cause degenerative changes in the kidney which ultimately may necessitate its removal. Cadaver experiments, twelve in number, have taught me that the renal veins will stand a stretching of five to seven cm. It then tears; and the tear most frequently takes place in the distal half of the vessel.

Dr. Carl Wagner:—In regard to the value of the x-ray in diagnosing renal calculi, I wish to mention some experience I have had. Some time ago I had a skiagraph taken of a case in which the clinical diagnosis was probably a stone in the kidney. No stone, however, could be seen, nor any shadow of a stone, in this skiagraph. Bearing this experience in mind, I had a second skiagraph taken, inasmuch as the first one was negative. I was reasonably certain, from my clinical experience, that a stone was present in this case, especially since I had spent a few nights at the house of the patient, who had colicky pains. She wanted to be relieved of this constantly recurring suffering. While these two skiagraphs did not show anything, I insisted that there was a calculus present. A third skiagraph was taken and in it was found a stone corresponding to the brim of the pelvis. I made a Czerny incision, exposing the ureter in the manner described by Dr. Bevan, throughout its whole length, and, not finding a stone in the ureter, I went clear up to the pelvis of the kidney, and could not find it there. I went farther down and found hanging over the brim of the pelvis a very resistant, hard mass. In lifting up the peritoneum, which was very adherent, with the ureter, and making an extraperitoneal operation, I found that this mass consisted of a long appendix hanging over the brim of the pelvis. I removed the appendix with the stone. I was positive that it was the cause of the trouble and closed the wound. The next day I asked the patient how she felt, and she replied that the pain was just as severe as it was before. The stone which was found in one of the calices acted as a kind of ball-valve, and obstructed the ureter at its exit from the kidney. The shadow in the third skiagram proved to be nothing more than a fecal stone in the appendix.

Meeting Oct. 31, 1906.

A regular meeting was held Oct. 31, 1906, with the president, Dr. George W. Webster, in the chair. The subject for the evening was a symposium on "Traumatic Rupture of the Abdominal Viscera (Contusions of the Abdomen)." Papers were read as follows: 1. "Etiology and Pathology," by Dr. Emanuel J. Senn. 2. "Symptoms, Diagnosis and General Prognosis," by Dr. D. N. Eisendrath. 3. "Special Prognosis and Treatment (a) Injuries of the Spleen, Liver and Pancreas," by Dr. William E. Schroeder. 4. "(b) Special Prognosis and Treatment of Injuries of the Stomach and Intestines," by Dr. E. Wyllys Andrews. 5. "(c) Special Prognosis and Treatment of Injuries of the Kidney, Ureter and Bladder," by Dr. William Fuller (see page 597). The discussion of the symposium was opened by Dr. S. C. Plummer and continued by Drs. Edward H. Ochsner, Victor J. Baccus, L. L. McArthur, C. C. Rogers, and in closing by Drs. Eisendrath, Schroeder and Fuller.

DISCUSSION.

Dr. S. C. Plummer:—I think we can reach the agreement in this symposium that in order to operate effectively, and with any but the smallest chance of success, where there is rupture of one of the hollow viscera, we must operate early. We want then, more than anything else, to know how to diagnose the presence of rupture. And here we meet with the greatest difficulty, and what would the surgeon not give to know whether there is a rupture of the gastrointestinal tract or not. Dr. Eisendrath spoke of the difficulty of differentiating between shock and hemorrhage in some of these cases. That is not the only difficulty we have in diagnosis. For instance, in a case in which we have shock, the question arises, what is the shock due to? Is it due always to rupture of one of the viscera? No; it is not. We know that shock can appear just the same in a contusion of the abdomen where the only visible injury is found to be in the abdominal wall itself, without any sign of injury of the viscera, and when we try to find some pathognomonic symptom to tell us whether a viscus is ruptured or not, we are entirely at sea. In von Bergmann's Surgery, the symptoms of injury or rupture of the gastro-intestinal tract are taken up one by one, and it is stated that the same symptoms may be due to something else than rupture of the gastro-intestinal tract. The only pathognomonic symptom is said to be the presence of gas in the free peritoneal cavity, and the writer goes on to say that it is difficult to recognize the presence of this free gas. So, it seems to me, we must come down to the point of following Dr. Andrews' advice, that when we are reasonably sure we have such an injury, operate promptly, doing the greatest good to the greatest number, taking the chance of making an exploratory laparotomy on a case now and then which we may find does not need it. In speaking of the ruptures of the gastro-intestinal tract, statistics show that they were much more common in the lower portion of the abdomen, more common in the ileum than any other part, and I would like to call your attention to an observation made by Dr. Andrews in a paper recently published, and that is, the influence of the promontory of the sacrum in causing these ruptures. Dr. Andrews has here an illustration which shows just what I was going to mention. There is no object against which the intestine can be crushed when force is directed against the structures of the abdomen from the front, which is so likely to cut the intestine, as the promontory of the sacrum. The rounded bodies of the lumbar vertebræ are quite blunt as compared with this, and the other portions of the pelvis against which the intestine may be pushed are also relatively blunt. It may be, this partly accounts for the greater frequency of rupture of the intestine low down in the abdomen than elsewhere. As to the question of irrigation, I wish I knew how to make up my mind about that. The results of Dr. Andrews with irrigation are good. On the other hand, many surgeons speak of getting better and better results in cases of septic peritonitis without any irrigation by putting in free drainage, low down in the pelvis, and sitting the patient up in the Fowler position. In regard to the necessity for operation for laceration of the kidney, Fenger says that 75 per cent. of cases of contusion and laceration of the kidney recover under the expectant plan. It would seem, then, that in cases where hemorrhage is not an indication for

operation, in cases where hemorrhage is so slight that it does no harm, we can safely wait to see how the case is progressing. Of course, a slight hemorrhage around the kidney does no harm if it remains aseptic; but at the first stage of infection we should do one of the conservative operations which Dr. Fuller mentions. I regard the whole symposium as very complete.

Dr. Edward H. Ochsner:—The subject has been covered so completely by the essayists of the evening that it is difficult to add much to it. There are a few points, however, to which I desire to call attention. One essayist discussed the question of hemorrhage of the liver. My experience in this matter has been limited, but, so far as it goes, it has been to the effect that the stopping of a hemorrhage of the liver is one of the easiest things that we have to do, providing we can get at it. There is where the difficulty comes in. The dome of the liver is so inaccessible that it is difficult to get at the point of hemorrhage, but if the point of hemorrhage is accessible, stopping of the hemorrhage is easy, for the reason that there is no structure in the human body at which blood pressure is so low as in the liver. In the only two cases I have seen hemorrhage was stopped easily by packing, in one instance, and, in the other, by the use of catgut stitches, placing the catgut stitches far enough back and tying them gently. The trouble has been in some of these cases that the catgut stitches have been tied too tightly. Hollander, a Berlin surgeon, has brought out a method of stopping hemorrhage from the liver which seems practical. I have used the method in cases of hemorrhage in other surgical work, and I have found it useful. Since reading his article, however, I have not had a case of hemorrhage of the liver, consequently have had no opportunity to use it for this purpose. He has constructed a hot air machine with which he is able to blow air heated to a temperature of 400 F., which will stop hemorrhage instantly on any surface of the liver. He has resected large areas of the liver for malignant tumors in which he stopped hemorrhage very quickly by the application of this hot air.

There is one form of intra-abdominal injury which has not been mentioned, and this, in my experience, has been rather more common than any of the others, and that is thrombosis of the mesenteric vessels. I have seen three cases of this injury, and it is a very severe one. One, I remember definitely, was an injury due to the kick of a horse, another was that of a man who fell forward over a stump. I do not recall the nature of the injury in the third case. These injuries were extreme. In one instance, the superior mesenteric vessels were so extensively thrombosed that nearly all of the small intestine had become necrotic, because of lack of blood supply. Several of these cases have been reported where a large portion of the small intestine was successfully resected when operation was made quite early.

There is one point which, it seems to me, has not been emphasized sufficiently, and that is, we can have very severe or fatal cases of intra-abdominal injury without the slightest evidence of injury of the external abdominal wall. I have seen two such cases. One patient was a man, who, while using a band saw, was struck with great force by a lath. In this case there was not the slightest scratch or injury to the abdominal parietes externally, yet the small intestine was ruptured. In another instance the handle of a plow struck a man in the abdomen, and while there was no evidence of any external injury, the patient was found to have an extensive rupture of the intestines.

I have had an opportunity to make an observation which I have not seen mentioned in literature, although it could probably be found on careful search. I refer to the peculiar character of the pulse. It is not a question of rapidity, but rather nature of the pulse. I can best illustrate it by citing the following case: Only ten days ago I had this experience: a patient upon whom a gastroenterostomy was performed at 10 o'clock in the morning, had a moderately profuse hematemesis at 3 o'clock. On examination, the patient was found to be in severe shock, and, although the pulse was not over 120, it was of a very peculiar character. It was not the hard, thready pulse that is found in peritonitis, but an extremely soft pulse. It was the kind of pulse that I have repeatedly observed in cases of ruptured extra-uterine pregnancy, and I have wondered whether this

was not Nature's attempt to prevent further hemorrhage, whether, as long as the bleeding has not been completely checked, Nature does not dilate the remaining vessels of the body in order to lower the blood pressure and thus make it possible for a thrombus to form at the bleeding point. I do not refer here to the character of the pulse which is observed just before exitus following severe hemorrhage, but to a condition of the pulse which occurs and which persists as long as the bleeding vessel has not closed, even though the actual loss of blood may have been relatively slight. I immediately placed the patient on the table, anesthetized her, opened the abdomen, made an incision through the anterior wall of the stomach, caught up the gastro-enterostomy anastomosis with my finger, applied a whip stitch to the gastro-enterostomy wound, closed the stomach and abdomen and the patient's pulse showed improvement before the patient left the table, in fact within a few moments after the bleeding vessel had been caught. The pulse remained just as rapid as it had been before, but it became firm and distinctly perceptible, whereas before it was soft and at times imperceptible, though the heart beats could be plainly noticed with the stethoscope. I consider this symptom one of the most important in the diagnosis of concealed hemorrhage, and it is one which I have repeatedly observed, especially in ruptured extra-uterine pregnancy.

If a patient who gives a history of having sustained an injury comes to us and we have reason to believe, after careful examination, that there is either a rupture of one of the viscera or intra-abdominal hemorrhage, we ought to be willing to take the chances of being wrong occasionally in our diagnosis, and, as Dr. Plummer has said, for the sake of doing the greatest good to the greatest number, we should at least make an exploratory laparotomy. If we go in fearlessly in such cases we will make an occasional wrong diagnosis, but we will save more lives than we have saved in the past. We ought to have the courage of our convictions and not be satisfied with making a diagnosis of internal injury and leaving the patient to his fate, but we should do the only rational thing that we can do, go in and repair such injury wherever it is possible. That is the only fair position to take, so far as the welfare of the patient is concerned.

Dr. Victor J. Baecus:—The specimen I will show you is from a case of rupture of the spleen. The patient was a man, 55 years of age, who, in going home at half past 5 o'clock in the evening, tripped on the sidewalk, fell, striking on the region of the stomach. He got up without assistance, went home, and suffered severe pain in the region of the spleen. I saw him on the third day after the accident, when he presented symptoms of abdominal hemorrhage, rapid pulse, anemia, slight abdominal distension, extreme tenderness on palpation, and dulness in the region of the spleen. His temperature was 100°; pulse between 120 and 140. I wish to speak briefly of two points mentioned in the papers. One of the essayists made the point that in cases of hemorrhage of the spleen the bleeding had a tendency to stop, if the rupture is not too severe, and the hemorrhage recurred, as a rule, at the end of forty-eight hours. A second point was that hemorrhage, as a rule, is the cause of peritoneal irritation, and that peritoneal irritation is characterized in some cases by frequent bowel movements. In my case the man had, in addition to the symptoms mentioned, frequent bowel movements, but no sign of peritonitis. He was operated on under spinal analgesia. The incision was made in the median line. I found it was useless to stop to mop the blood out of the abdominal cavity. I quickly passed my hand over the spleen and liver to see which of these organs was involved. I found the spleen was involved and removed it; but the patient succumbed thirty-six hours later. In another case of liver hemorrhage, which I had occasion to see, the patient was not operated on. After a while he was able to be up. His temperature was normal, pulse normal, and he was about to be discharged. The same evening that patient in getting out of bed to step on the floor, dropped dead. I was present at the postmortem examination, which revealed an aseptic healing of the liver, and undoubtedly the sudden getting up from bed caused separation of the liver fragments, hemorrhage occurred, followed by speedy death.

Dr. L. L. McArthur:—To rise and coincide with the general consensus of opinion would be of little value, but sometimes we may profit by relating the mistakes we have made in dealing with this class of conditions. Last year a child was brought into the hospital twelve hours after having been run over. There was no external evidence of injury visible. There were no cutaneous lesions. A little blood was found in the urine. There was fulness in the left flank, and tenderness in the left flank, this dulness changing on change of position. There was some shock. There was great pallor; a weak pulse, with no blood in the stools, no vomiting. With that condition, it looked as if we might have either a rupture of the bladder or a rupture of the kidney. A laparotomy was performed. An incision was made in the median line between the umbilicus and symphysis; blood was found in the free peritoneal cavity rather well diluted, so much so that it was supposed to be the urine that had diluted it, or it may have been serum. Putting the child in the Trendelenburg position (she was 11 years of age), the intestines gravitated toward the diaphragm. Nothing could be seen abnormal in the pelvis; there was no injury to the bladder. The peritoneum lining the left half of the pelvis and up into the left lumbar region showed, definitely, fluid behind it of a bloody character. This was drained extraperitoneally, bloody urine seeming to come from it. Exploring the general abdominal cavity, there seemed to be some blood from the neighborhood of the stomach. The incision was accordingly enlarged, halfway to the ensiform, but no further injuries were found. On the second day after the laparotomy the child began to vomit some blood. Symptoms of intestinal obstruction developed, without intestinal dilatation, tympany or rise of temperature. She gradually grew worse, and finally dilatation of the pleura with gas was detected. The child died. Postmortem examination showed that there had been, in addition to this injury in the neighborhood of the kidney, which we supposed to be the cause of the slight symptoms, sufficient to explain the child's condition, rupture of the diaphragm with hernia of part of the stomach.

Showing how slight a trauma can produce a grave lesion, I had a few months ago a case of a little child, about 10 years of age, who was brought to the hospital on Monday with a history that on the afternoon of the day before, while playing with some companions, one of them pushed him over a box; he fell backwards, striking on the edge of the box, after which he got up, went home, and ate supper, shortly after which he began to complain of pain. I elicited the history of the fall. The next day the child was brought to the hospital with a tumor in the right hypochondriac region, which reached fairly well to the middle line, and which was flat on percussion. The general symptoms presented by the patient were practically negative, other than this tumor. The tumor seemed to be in the abdominal cavity. An anterior incision at the semilunar line, muscle-splitting in character, showed that the tumor was retroperitoneal, and on making a loin incision urine of a bloody character escaped. It seemed sufficient to drain this cavity. Drainage was instituted, and the boy made a prompt recovery, with a fistula in the side, which, at the end of two or three weeks, we supposed would close after taking out the tube, the urine having escaped from the fistula during the time the tube was in. Whenever the tube was taken out the tumor would recur; and whenever it was put back the tumor would go down. After nine months it became necessary to do something to close this fistula, and so, three weeks ago, the abdomen was opened and a sacculated condition of the kidney noticed, the mid-portion of the kidney being, at that time, distended to such an extent that there was not enough good renal tissue to preserve, so the kidney was excised. After excision, a stricture, probably traumatic in character, situated at the portion in which the authors have said it was most likely to occur, was found an inch below the kidney, in all probability traumatic in origin.

One of the essayists called attention to the fact that when the urinary bladder was ruptured, from trauma, peritoneal symptoms would immediately start. This is true, if the vesical content be septic. If, however, the vesical content, either biliary or urinary, be aseptic, it may sometimes collect in such a large quantity in the abdomen, and for a period of three or four days, as to present the condi-

tions of ascites, and then only be recognized as urine or bile. There may be no peritonitic symptoms. It is not necessary, because there is a rupture of the bladder, gall or urinary, that peritonitis start promptly.

As to liver hemorrhage, Dr. Ochsner has emphasized what I found out for myself, that is, after excising about a third of the liver for carcinoma, it was a very easy matter to check a hemorrhage of the liver by merely packing with a Mikulicz sac. The portal circulation is the chief circulation of the liver; that is, a circulation with no heart behind it to force it through, but it is a flow of a capillary character through tubules, for the walls of which it has an affinity. Therefore, slight packing will check it. In most hemorrhage areas that can be packed in the liver, hemorrhage can be checked.

Interesting, again, has been my experience in that I have been called to operate for subparietal injuries of hollow viscera, and have found, on four different occasions, that the peritonitis, which was supposed to be starting from the injury, which was very definite in its history, had not been that of perforation, but had been that of appendicitis. One case was that of a man, who, in running rapidly downstairs, struck the side on a flat knob on the banister. He developed appendicitis, which was called traumatic rupture, with traumatic peritonitis. The second case was a boy belonging to the Yale crew, who in rowing, "caught a crab," i. e., had his oar strike him in the right groin. He developed appendicitis, although his case was supposed to be one of rupture of the intestine. Another man fell on a sidewalk, both feet going out from under him, and his arms going down against his side, over the appendix. He developed appendicitis, although he presented symptoms or characteristics of perforative peritonitis from injuries of the hollow viscera. The symptoms and history in some of these cases make one think that perforation of one or more of the hollow viscera may occur.

Dr. Cassius C. Rogers:—With reference to hemorrhage from rupture of the spleen, the spleen is an organ that is easily accessible. By making an incision along the semilunaris, applying clamps and grasping the splenic artery, hemorrhage can be controlled easily, and the spleen can be readily and quickly removed; and so far as we know, the spleen has no physiological function of importance, and all we have following its removal is a leucocytosis for a short time, after which the patient gets along normally.

I have had one case of rupture of the common duct from gall bladder disease. The patient was a very fleshy woman, and a great deal of time would have been required to suture the common duct, so I ligated the common duct and anastomosed the gall bladder to the duodenum. She got along nicely; she has had no trouble from it at all, and it is much easier to do than to try to suture the common bile duct.

In cases of rupture of the kidney, not infrequently the rupture does not extend into the pelvis of the kidney, but we get hemorrhage into the pelvis, and this hemorrhage is liable to stop up the ureter, and we get an accumulation of urine in the pelvis of the kidney which results in hydronephrosis. In all cases where the rupture does not extend into the pelvis I deem it advisable to extend the rupture by incision into the pelvis and drain, as in pyonephrosis.

Dr. Eisendrath (closing the discussion on his part):—There are one or two points I would like to speak about, first in regard to a statement made by Dr. Ochsner. I think Dr. Crile has shown that the effect of a severe hemorrhage is to paralyze the vasomotor centers, so that the condition of the pulse, which he speaks of, and which I have usually spoken of as an "empty pulse," i. e., one which has no volume to it, the artery being soft, is explained by the paralysis of the vasomotor centers with resultant decrease of vessel tone and blood pressure.

A question which has been brought out by Dr. Fuller is a very important one, whether or not to operate in these cases of retroperitoneal ruptures of the kidney. Trendelenburg in his recent address, delivered in Chicago in May, 1906, reported thirty-five cases of rupture of the kidney, observed in his own clinic, of which twenty-eight recovered without any operative interference whatsoever. He is a decided advocate of non-operative interference in ruptures of the kidney, although he is strongly in favor of it in all other forms of traumatic rupture of

the abdominal viscera. That has been about the policy which I have pursued, and I think for the present it is a safe policy, for the reason, I believe, that we are apt in some of these cases to undertake an operation for a condition which otherwise might have been taken care of by itself. I recall the case of a man who came into another surgeon's service at the Cook County Hospital last January. He had fallen across a plank, and immediately following it he had a large amount of blood in his urine for a number of days, and then a gradually appearing swelling in the renal region. An incision was made into the swelling and bloody fluid was evacuated, which was mixed blood and urine. The case continued to suppurate similar to Dr. McArthur's case, for five months; then he came to my service. I operated on the sinus which was discharging pus, and I found practically nothing left of the kidney except the pelvis of the kidney and a few shreds. It is often a question in my mind whether, when these patients get over the immediate shock if we can make a diagnosis of injury of the kidney, it is not better to resort to conservative treatment except where rupture takes place into the peritoneal cavity. As to the possibility of late complication following kidney injuries, I recall one case in which there was a decided interstitial nephritis following what was evidently a rupture of the kidney ten years before.

Dr. Schroeder (closing the discussion on his part):—With reference to what has been said about conservative operations, I think conservative operating would mean to save the patient's life, if possible. In a case in which there is a complete transverse tear of the kidney, Dr. McArthur said, don't operate, and he didn't. He knew what was the matter. I have twice, in traumatic injuries of the kidney, found the upper pole ruptured. Once I resected a second time; the upper pole was ruptured slightly and sutured. This was a conservative operation, which means save the patient if you can. In this class of cases, if we wait and allow the patients to lie in bed for a week or ten days, there will be no operation. The coroner's statistics on just such cases will stagger you.

Dr. Fuller (closing the discussion):—I have frequently noticed the kind of pulse following hemorrhage as described by Dr. Ochsner, and have also noted the almost immediate improvement in its volume and character, not just after the ligation of the bleeding point, but before it; this I have always attributed to ether anesthesia. Subcutaneous injection of ether will improve the pulse, just as ether will when given for anesthesia. I have often noticed this in operating for rupture in tubal pregnancy and hemorrhages from other sources. In fact, when we recall what the real condition is from the loss of blood, it is very hard to understand how the mere control of the bleeding point would produce almost instant improvement of the pulse.

CHICAGO OPHTHALMOLOGICAL SOCIETY.

Oct. 8, 1906.

DR. GEO. F. FISKE, PRESIDENT.

Dr. F. A. Phillips presented a case of methyl alcohol amblyopia with consecutive atrophy. The patient had spilled about a quart of the alcohol on the floor and over his foot; after remaining in the room several hours he felt dizzy and noticed objects were indistinct; some 12 hours later he awakened after a short sleep to find himself totally blind. Two days later he found the pupils dilated and fixed, vision nil, marked deep tenderness on backward pressure of the bulb, the papilla normal, slight overfilling, especially of the veins. Under treatment vision for large objects returned about the tenth day, and for fingers at four feet in a month. Some atrophy was noticeable two weeks after the onset and was complete in six months. Dr. Phillips thinks the case is one of acute retrobulbar neuritis with strangulation sufficiently near the bulb to impair the return venous circulation although producing no disc changes.

Dr. Henry Gradle reported the accidental observation of an apparent cure of a case of spring catarrh of some 14 years' duration, while the patient had been using alum spring water freely in the eyes at Hot Springs, Ark. All the discom-

fort had disappeared and a mere trace of the follicles remains in one eye only; both eyes show the typically yellowish, slightly thickened conjunctiva of atrophic vernal catarrh. As the alum spring contains no ingredients which could explain its presumptive influence in this case, the result may possibly be due to the proven radio-activity.

Dr. Thomas Faith showed a case of marked arteriosclerotic changes in fundus, accompanied by central bilateral chorioiditis. The patient was a hard-working man of 48 without history or evidence of lues or alcoholism; with arterial tension increased to 145 mm. during diastole and 185 mm. during systole. Vision, which had been poor since an attack of typhoid five years ago, was improved under treatment from one-fifth to one-fourth normal. Dr. Faith called attention to (1) The central chorioiditis which Nettleship has attributed to the arterial sclerosis in these conditions; (2) The occurrence of the most marked changes in the inferior temporal branch of the central retinal artery as mentioned by de Schweinitz; (3) The fact that the notches in the veins, where they are crossed by the arteries, have almost disappeared under the influence of nitroglycerin; (4) The improvement in vision under treatment.

Dr. G. F. Suker exhibited a case of non-traumatic iridocyclitis plastica in which the second eye became sympathetically involved three weeks later; a subsequent iridectomy upon the primary eye improved the vision somewhat. Dr. G. F. Suker presented specimens of two intraocular tumors in neither of which could a diagnosis be made by the transilluminator because of recent hemorrhage surrounding and covering the tumor, giving a perfect red reflex and no shadow.

Dr. J. F. Burkholder presented as his entrance thesis a paper on "Fundus Lesions with Normal Vision." The essayist emphasized the fact that many fundus lesions other than choked disc may exist without interference with central vision, and exhibited seventeen elaborate paintings in color, including cases of pseudo-papillitis, chorioiditis disseminata, central chorioiditis, marked perivasculitis of the retina and luetic, leukemic and hemorrhagic retinitis.

E. V. L. BROWN, *Secretary*.

AUXPLAINES BRANCH.

The first regular meeting of the Auxplaines Branch of the Chicago Medical Society was held at the Phoenix Hospital, Maywood, Ill., Oct. 26, 1906. This branch endorsed the establishment of a business bureau by the Chicago Medical Society. Dr. Harry C. Worthington read a paper on "The Management of the Second and Third Weeks of the Puerperium," in which he brought out the advantages gained by certain gymnastic exercises during that period.

W. EVAN BAKER, *Secretary*.

CRAWFORD COUNTY.

The Crawford County Medical Society met in regular session at the office of Dr. A. G. Meserve, September 13, with the President-elect, Dr. L. R. Illyes in the chair. There were present Drs. J. H. McGovern, I. L. Firebaugh, L. R. Illyes, J. A. Ikemire, Frank Dunham, T. N. Rafferty, A. G. Meserve, C. H. Voorheis, R. S. Johnston and H. N. Rafferty. The minutes of the twenty-sixth annual meeting were approved as read. The Board of Censors reported favorably on the application of Dr. Jonas W. Carlisle, of Robinson, and, on motion, the report of the Censors was accepted and Dr. Carlisle elected to membership.

Dr. Illyes exhibited a case of Aneurism of the Subclavian Artery, a very excellent one for the demonstration of this interesting condition. Dr. Dunham reported a case of numerous gummatous muscular and skin tumors, illustrating the pleasing results of proper treatment, and the characteristic relapse following alcoholic excesses. Dr. Ikemire recited the history of a young man with incipient phthisis, in which an early diagnosis, followed by the institution of proper treatment, both hygienic and drug, gave promise of good results. Dr. Price reported a case of

bone tuberculosis, extending over a long period of time, and presenting many unusual features. After a free and interesting discussion of these cases, and the transaction of routine business, the Society adjourned.

H. N. RAFFERTY, *Secretary.*

The Crawford County Medical Society held its regular bi-monthly meeting at the office of Drs. T. N. and H. N. Rafferty, in Robinson, Thursday, November 8.

In the absence of the president, Dr. C. Barlow was called to the chair. There were present Drs. T. N. Rafferty, I. L. Firebaugh, C. Barlow, Frank Dunham, S. A. Smith, R. S. Johnston and H. N. Rafferty. The program consisted of a symposium on Varicocele, Hydrocele and Scrotal Hernia, Dr. Frank Dunham presenting The Etiology and Differential Diagnosis; Dr. H. N. Rafferty, The Treatment, Palliative and Curative; and Dr. S. A. Smith, The Permanent Results to Be Expected From Proper Treatment. These conditions, and especially their successful treatment were discussed at length by all present, and many valuable points brought out.

The secretary read a letter from Dr. W. A. Evans, of the Medico-Legal Committee of the Illinois State Medical Society, suggesting the advisability of each county society appointing some local attorney as its counselor. On motion, this matter was laid on the table.

The secretary read a letter from Dr. A. T. McCormack, secretary of the Kentucky State Medical Association, asking the coöperation of our society in the movement to uphold the fees in life insurance examinations, and enclosing a copy of the resolutions regarding the matter, adopted by their society at its last annual meeting. On motion, the secretary was instructed to inform Dr. McCormack that our society took action regarding the regulation of the fees for life insurance examinations at its stated meeting in May, 1906.

On motion, the society adjourned to meet in January, 1907.

H. N. RAFFERTY, *Secretary.*

EDGAR COUNTY.

The regular meeting of the Edgar County Medical Society was held at Paris, Oct. 31, 1906, with the President, Dr. W. S. Jones, in the chair. Members present were: Drs. Baum, Cretors, Evinger, Fuller, Ferguson, Jones, C. S. and E. O. Laughlin, Lyeon, McCord and Slaughter. Dr. E. O. Laughlin read a paper on The Care of the Infant. Dr. A. W. Slaughter presented a paper on Specific Infection of Women, with Special Relation to Latent Gonorrhea.

W. H. TEN BROECK, *Secretary.*

HANCOCK COUNTY.

The Hancock County Medical Society met at Augusta, Oct. 1, 1906. A short business session was held at 11 o'clock, after which the Augusta members entertained the Society at dinner at the Commercial Hotel. The Society convened at one o'clock. Dr. Percy read an interesting paper on The Borderland of Insanity. Dr. Cooper presented a case of fracture of the patella, which was discussed by Drs. Dorsey, Ruymon, Roberts and Nice. Drs. Tait, Homphry, Miller, Casform, Sherwood were elected to membership. The applications of Drs. Hershey and Camp were referred to the Board of Censors. Members present: Callahan, Nice, Ruymon, Cooper, Roberts, Valentine, Parr and Blender. Visitors: Percy, Dorsey. The next meeting will be held in Warsaw, on the first Monday of January. The Society extended a vote of thanks to the Augusta members for the royal entertainment.

WM. BLENDER, M.D., *Secretary.*

MACON COUNTY.

The Decatur Medical Society met in the rooms of the Decatur Club, Oct. 30, 1906, the vice-president, Dr. M. P. Parrish, in the chair. Dr. C. Martin Wood read a paper on Paratyphoid, calling attention to the differential symptoms between this condition and true typhoid. These are the shorter period of invasion; the shorter or absent period of continued fever; marked diurnal remission of temperature; absence of Widal reaction with typhoid bacilli, but positive reaction with paratyphoid bacilli. The treatment is the same as for typhoid fever, unless the serum treatment is used. In this case, the serum treatment would have no effect on the course of the disease. The serum treatment of typhoid fever is used extensively in South Africa, and there the differential diagnosis is important.

Pursuant to the reading of resolutions from the Kentucky State Medical Association, the following resolution was adopted unanimously:

RESOLVED, That it is the sense of the Decatur Medical Society that examinations for old line life insurance companies should not be made for less than five dollars.

Owing to the fact that the regular meeting night for the Society in December comes on Christmas night, it was decided to hold the December meeting on the third Tuesday of the month.

Dr. M. P. Parrish presented an appendix removed about an hour previous to the meeting. Patient suddenly had pain in the abdomen on the night of October 29; before morning vomiting began. Went to the hospital about six o'clock in the morning, having a temperature of 99; by noon it had gone up to 103; by night 105. Upon opening the abdomen the appendix was found free from adhesions, but its tip presented the appearance of a clot of blood. There were no perforations and no complications.

M. W. FITZPATRICK, *Secretary-Treasurer.*

M'LEAN COUNTY.

The November meeting of the McLean County Medical Society was held in the parlors of the Illinois Hotel at 7 p. m., Nov. 1, 1906. The minutes of the last regular meeting were read and approved. Communications from Dr. Carl E. Black concerning the ILLINOIS MEDICAL JOURNAL, and from Dr. McCormack relative to insurance fees, were laid on the table until the next regular meeting. A card of thanks was read from Mrs. Dr. Elder and daughter. Dr. Taylor referred to an inquiry he had made to the State Board of Health with reference to the relative efficiency of formaldehyd and sulphur as agents of disinfection, stating that formaldehyd is as efficient as sulphur, but that neither, for physical reasons, is adequate for disinfecting books.

This ending the business meeting, the Society retired to the Ordinary for dinner, after which Dr. James F. Percy of Galesburg, president of the State Society, gave a masterly address on The Borderland of Insanity, prefacing his paper by a few remarks on the importance of the legal defense fund and urging coöperation of the profession in support of the stand taken by the American Medical Association against the reduction of fees for insurance examinations. Dr. Percy referred to his subject as touching not upon insanity *per se*, but upon those cases of neurasthenia, hysteria and kindred conditions which if allowed to go untreated are liable to result in insanity. He spoke of these cases as traceable to ancestral stigmata, to crowding in early life, mental strain in public schools and other conditions which have been aptly termed Americanitis and which produce a disruption of the nervous equilibrium. Prevention lies in prohibiting physically and mentally unfit subjects from marrying. In the case of children, the public schools have in hand the proper solution of the problem. A vote of thanks was tendered Dr. Percy and likewise the committee on entertainment.

The Board of Censors reported favorably upon the application of Dr. E. C. Williams of Downs, and the secretary was instructed to cast the ballot of the Society for Dr. Williams. Those present were: Drs. Noble, C. M., Brown, Fox, A. L., Fox, R. D., Chapin, C. E., Bath, Fenelon, Vandervort, Rogers, Godfrey,

Smith, J. W., Lee, Smith, C. R., Hawks, Hull, Meyer, Sloan, Covery, Howell, Jackman, Little, Wakefield, Yolton, R. G., Yolton J. L., Elder, Rhodes, Guthrie, Taylor, J. B., Henline, Parkhurst, Glasford, Percy, Perry, H. B., McCormick, F. C., Sargent, Cantrell.

THOS. W. BATH, *President*.

O. M. RHODES, *Secretary*.

ST. CLAIR COUNTY.

The regular quarterly meeting of the St. Clair County Medical Society was held at the St. Clair Country Club, October 4. The following officers and members were present: Hugo Wangelin, president; J. W. Twitchell, corresponding secretary; C. W. Lillie, recording secretary; A. E. Hansing, treasurer; and Drs. Adams, Caldwell, Hilgard, Massie, W. E. Wiatt, Portuondo, Miller, Fairbrother, Sloey, W. S. Wiatt, Campbell, Grimes, Wiggins, Walter, Wilhelmj, E. H. Lane. Minutes of last meeting read and approved.

Dr. Hansing reported a case of leukemia in a married woman, 28 years of age; had one child. Spleen began to enlarge about eight months ago, and two months ago filled the entire left side of the abdomen, extending to the pelvis, and to the median line. Six months ago x-ray treatment was begun; this appeared to improve the condition, the spleen being slightly reduced, and other symptoms improved. The subcutaneous hemorrhages had not been reduced, and at the time of the report were growing worse; probably owing to the temporary suspension of the x-ray treatment. For the hemorrhages, stypticin had been used, but with no apparent benefit.

Dr. Campbell reported a case which he called "habit," being that of a robust man who had worked for twelve years at night, during which time he had enjoyed excellent health. He was then promoted to foreman and given day work; it was then found that he could not sleep at night and that he remained sleepy all day. On Sundays he sleeps all day, which appears to be about all the sleep he gets.

Dr. W. S. Wiatt read reports of four cases of hernia which had been operated on and in which the conditions found strongly emphasized the necessity for prompt surgical attention. Dr. W. E. Wiatt reported a case of sepsis, following abortion.

Dr. Caldwell detailed the symptoms of a case which was difficult of diagnosis. A woman suffered severe menstrual pains; menstrual flow scant, and light in color; severe pains like labor pains followed the menstruation. Examination by speculum showed a severe vaginitis; surfaces hard and unyielding; uterus fixed. No microscopic examination had been made but a suspicion of malignancy was suggested by the physical condition.

Dr. Wilhelmj asked for aid in the diagnosis of a case in which a colored man, twenty-five years of age, had been unconscious for two or three days when he was called; reflexes, with the exception of Babinski's, were lost; pulse 56, temperature normal; destructive, maniacal delirium was also a feature of the case. No diagnosis had been made, but mercury had been given on general principles. The treatment was approved by the members who discussed the case, the opinion being general that syphilis was responsible for the condition.

Dr. Lillie spoke in reference to the attitude of the profession on the question of tuberculosis and urged more energetic effort for the establishment of sanatoria in the county. Asked the members of the Society to unite in an earnest campaign of education on the subject, and to use its influence with the board of supervisors, and with the municipal authorities of East St. Louis and Belleville, to unite in the work.

Dr. Miller, of Caseyville, suggested a popular subscription and offered \$50 to start with. Dr. Wiatt offered to furnish a tent for the sanitarium.

Dr. Wiggins reported a very extensive fracture in the cranium of a child, the fissure extending entirely around the calvarium.

The Society adjourned, after which the members joined the ladies and enjoyed their society and supper.

C. W. LILLIE, *Recording Secretary*.

TAZEWELL COUNTY.

The Tazewell County Medical Society was reorganized at Zerwekh's Hall, Pekin, Thursday evening, November 8. Through the efforts of J. Whitefield Smith, Councilor of the Fifth District, this reorganization was brought about. Dr. Smith had sent three separate invitations to each member of the profession in Tazewell County and had secured the attendance of a number of gentlemen outside of the county interested in medical organization, with a result that an interesting program was carried out and a reorganization of the society was accomplished at the meeting. Those present and participating from outside the county were Dr. J. Whitefield Smith, Councilor, of the Illinois State Medical Society; Dr. J. F. Percy, Galesburg, President of the Illinois Medical Society; Dr. H. S. Oyler, Lincoln, Secretary of the Brainard District Medical Society; Dr. T. W. Bath, Bloomington, President of the McLean County Medical Society; Dr. E. W. Weis, Ottawa, Secretary of the Illinois State Medical Society; Dr. E. Mammen, Bloomington, member of the Medical Reorganization Committee, and Dr. G. N. Kreider, Springfield, editor of the ILLINOIS MEDICAL JOURNAL.

All of these gentlemen spoke on the various phases of medical reorganization. The Hon. Daniel Sap, mayor of Pekin, delivered an address of welcome. After the completion of the program Dr. Eugene F. Kelchner, of Delavan, was elected president and Dr. C. G. Muehlmann of Pekin, secretary of the reorganized society. The members of the profession from Tazewell county were William Niergarth, Pekin; J. M. Cody, Tremount, Harry V. Bailey, Pekin; G. D. Prewett, Pekin; T. D. Murphy, Manito; A. A. Crooks, Morton.

WILL COUNTY.

The regular meeting was held November 13. The program was as follows: 1. Some Practical Points in the Treatment of Diabetes, Dr. Alfred C. Croftan, Chicago. 2. General discussion on the business side of the profession, Dr. William Dougall. The most excellent address of Dr. Croftan was enthusiastically received. The general discussion, led by Dr. Dougall, touched on many points of vital interest to the physician, such as insurance examination fees, bad bills, counter prescribing, etc., and there was a general sentiment that the subjects should be given more time at some future date.

The following members were present: Drs. Curtiss and Midgeley of Wilmington; Browne and Jump of Plainfield; Gilbert of Elwood; Nash, Dougall, F. W. Rulien, McBride, Brannon, Munch, Hummel, Waterhouse, Cushing, Benson, McGann, LeSage, Cohenour, Lennon, Richards and Bowles of Joliet.

MARION K. BOWLES, *Secretary*.

ÆSCULAPIAN SOCIETY OF THE WABASH VALLEY.

The sixtieth annual meeting of the Æsculapian Society of the Wabash Valley was held at Paris, Ill., Oct. 25, 1906, under the presidency of Dr. A. T. Robertson, of Ashmore, Ill. The morning session was devoted to the transaction of routine business, including the proposition of eight candidates for membership, and the election of twelve new members, whose applications were received at the last semi-annual meeting. At the afternoon session the following papers were read: 1. "Home Treatment of Consumption," Dr. W. N. Thompson, Sullivan, Ind.; 2, "Summer Diseases of Children," Dr. J. C. Epperson, Kansas, Ill.; 3, "Intussusception in Childhood, with Report of Case," Dr. E. M. Cooley, Oblong, Ill.; 4, "Abortion—Its Causes, Symptoms, Treatment and Moral Effects," Dr. F. E. Bell, Mattoon, Ill.; 5, "Treatment of Lobar Pneumonia," Dr. W. J. Fernald, Frankfort, Ind.; 6, "Obstetrical Observations," Dr. E. S. Allen, Arcola, Ill.

At six o'clock the society adjourned to the Christian Church, where the annual society dinner was served to about one hundred members. After the completion of the banquet, the sixtieth anniversary of the birth of the society was fittingly observed by the following responses, with Dr. E. S. Allen as toastmaster:

1. "The Birth of Our Society—Its Meaning," Dr. C. E. Price, Eaton, Ill.; 2, "Æsculapian Individuality," Dr. Z. T. Baum, Paris, Ill.; 3, "Reminiscences," Dr. S. J. Young, Terre Haute, Ind.; 4, "The Doctor as a Good Samaritan," Rev. Ira W. Allen, Paris, Ill.; 5, "Ten Years as Secretary," Dr. C. B. Johnson, Champaign, Ill.; 6, "Once an Æsculapian, Always One," Dr. G. T. Ragan, Neoga, Ill.; 7, "Our Future," Dr. J. L. Reat, Tuscola, Ill.; 8, "The Man on the Inside," Dr. E. B. Cooley, Danville, Ill.

The membership of this society now numbers about three hundred, and there was an attendance of one hundred and twenty-five at this meeting, which was very successful and enjoyable from every standpoint.

Champaign, Ill. was chosen as the place for the semi-annual meeting, May next, and the following officers were elected for the ensuing year: President, Dr. Chas. B. Johnson, Champaign, Ill.; Vice-President, Dr. F. E. Bell, Mattoon, Ill.; Secretary and treasurer, Dr. H. N. Rafferty, Robinson, Ill. (re-elected); Board of Censors: Dr. J. T. Montgomery, Charleston, Ill.; Dr. C. E. Price, Eaton, Ill.; Dr. Mark Rowe, Paris, Ill.; Dr. W. E. Bell, Terre Haute, Ind.; Dr. T. E. Walton, Danville, Ill..

NEWS OF THE STATE.

Smallpox is reported at Chillicothe.

Galesburg reports five cases of smallpox.

Dr. E. J. Doering has returned from Europe.

Four cases of smallpox are reported from Viola.

Dr. Harry H. Henning, of Plano, to Sugar Grove.

Smallpox is reported from Walnut, Bureau County.

Dr. L. D. Wright, of Rochester, has located in Alexis.

Dr. Lutjens has removed from Farmingdale to Buffalo.

Oak Park reported a case of smallpox on November 14.

Dr. S. P. Hart, of Auburn, has moved to East St. Louis.

Dr. W. C. Mitchell has removed from Fairview to Bradford.

Dr. B. F. Crabtree has removed from Anna to Paragould, Ark.

Dr. Albert E. Brown, of Waukegan, has moved to Groton, S. D.

The Isolation Hospital of Granite City was burned on October 16.

Dr. W. Benjamin Pickrell, of Springfield, has located in Spokane, Wash.

Dr. C. Hayes, of Pleasant Plains, has opened an office in Amarillo, Texas.

The Schwabenverine, of Chicago, has donated \$1,150.00 to local hospitals.

Dr. Frank E. Baldwin, of Peoria, is recovering from an attack of septicemia.

On October 25 twenty-one cases of smallpox were reported as present at Wyoming.

Dr. T. L. Wilcox, of Springfield, has been making an extended visit to Kentucky.

Blessing Hospital, Quincy, has realized \$2,674.00 from hospital day contributions.

Dr. S. P. Hopkins, of Springfield, has been visiting in Omaha and San Francisco.

Dr. John C. O'Connor and family, of Buffalo, have returned from a trip to Colorado.

Dr. Elizabeth Matthews, of Springfield, will make a trip to Vienna for medical study.

Typhoid fever is said to be epidemic at Waukegan, owing to a contaminating water supply.

Smallpox is reported from Murdock, Douglas County. It was first diagnosed as "Cuban itch."

A reception and ball was held November 28 by the Chicago Polyclinic Nurses' Alumni Association.

The Board of Education of Averyville has closed the schools for one week on account of diphtheria.

Dr. Austin M. Lindley, of Urbana, injured his arm recently by falling from the haymow of his barn.

J. F. Alderson, of Urbana, an osteopath, was fined \$100.00 for practicing medicine without a license.

The People's Hospital, Chicago, is about to move its new building at Twenty-third street and Archer avenue.

Typhoid fever is reported at Mont Clare. The local health department states that it is due to impure milk.

W. R. Grady, of Rushville, was fined \$100.00 and costs on November 1 for practicing medicine without a license.

Diphtheria and scarlet fever are epidemic in Peoria County, and the schools have been closed in several districts.

In a collision between his automobile and a street car on November 10, Dr. Wm. P. Koons was severely cut by broken glass.

The State Board of Health has moved its laboratories to 228 East Capitol avenue, Springfield, in order to obtain more space.

Dr. P. H. Oyler, of Mt. Pulaski, has sold his practice to Dr. Van Hook and will look after his farming interests in the South.

Typhoid fever is said to be present at Morris. Olney, Batestown, Hillery, Oakland and Onarga report diphtheria as present.

Dr. F. C. Hotz has completely recovered from his recent illness and has resumed his practice in the Venetian Building, Chicago.

George Styer, a West Randolph street, Chicago, druggist, is said to have been arrested on November 8, charged with selling cocaine.

Dr. J. S. Clark has completed his term as interne at the Illinois Charitable Eye and Ear Infirmary. He has located at Freeport.

Two maids employed in the German Hospital were asphyxiated by gas and two others overcome at that institution on November 8.

Dr. Fernand Henrotin, one of the oldest and most prominent members of the Chicago Medical Society, is critically ill with myocarditis.

N. W. Harris, of Chicago, transferred, on November 3, the new home for nurses erected by him for Wesley Hospital at a cost of \$30,000.

The Board of Supervisors of Sangamon County has purchased \$200.00 worth of tents for tubercular patients in the local hospitals.

Typhoid fever is reported by the State Board of Health as prevalent in thirty-four localities in the state in a more or less epidemic form.

Dr. T. C. Williams, fellow in zoology at the University of Chicago, has been elected professor of biology at Morningside College, Sioux City, Iowa.

Diphtheria is reported at East Springfield, where the State Board of Health has been compelled to adopt stringent measures to enforce quarantine.

The Illinois Central Railroad has appointed Dr. Arch G. Servoss as local surgeon at Havana, in place of Dr. P. L. Dieffenbacher, who died recently.

Dr. H. T. Ricketts, of the University of Chicago, is continuing his work on spotted fever with material which he secured in the west during last summer.

The Michael Reese Hospital, Chicago, has received \$500.00 from the estate of Adolph Loud. Alexian Brothers' Hospital has received \$250.00 from the same source.

Several cases of smallpox have appeared at Peoria and have caused a general revaccination. The matter has been investigated by an officer of the State Board of Health.

Dr. Miles D. Baker has tendered his resignation as assistant superintendent of the Illinois Southern Hospital for the Insane at Anna. Dr. Baker has held this position for ten years.

St. Francis' Hospital, Peoria, celebrated the fiftieth anniversary of the connection of Dr. Joseph Studder, of that city, with the institution and entertained him as its guest of honor.

Dr. Broughton, of Rockford, has incorporated his sanitarium. The institution is capitalized at \$40,000, with Dr. Russell Broughton, George T. Robertson and R. K. Welsh as incorporators.

Beverly Farms, Godfrey, has just completed a 12-room addition to its main building. Its new school and gymnasium building has also been opened. Dr. W. H. C. Smith is superintendent.

Dr. Wm. E. Quine opened the Chicago Medical Society's course of free lectures, on November 3, by delivering a lecture on "Some Problems in Preventing Disease" at the Chicago Public Library.

Governor Deneen has approved the plans for a hydropathic hospital in connection with the Illinois Hospital for the Insane at Elgin. The building is to have a capacity of about twenty patients.

Samuel Taylor, a cement worker of Monmouth, has brought suit for \$1,000.00 damages against Dr. Zimmerman, of Cameron. Taylor charges that the results following a broken arm were unsatisfactory.

The Visiting Nurses' Association of Chicago and the Passavant Memorial Hospital of Chicago are among the five beneficiaries among whom will be divided \$50,000.00 from the estate of Mrs. Lucretia J. Tilton.

Owing to the presence of three cases of smallpox in Moline, the Health Commissioner has instructed the superintendent of schools that all children in the infected district must be vaccinated or remain out of school.

The Chicago Urological Society has elected Dr. Louis E. Schmidt president; Dr. J. Allen Paton, vice-president; Dr. Budd C. Corbus, secretary; Dr. Wm. T. Belfield, councilor; Dr. Henry G. Anthony, alternate councilor.

Coroner Peter Hoffman, of Cook County, will endeavor to obtain an indictment against a midwife, Magdaline Straus, so it is reported, on the charge of having caused the death of a patient by means of a criminal operation.

Otto Young, just before his death, transferred to Dr. Billings the property at the northwest corner of South Park avenue and Fifty-fourth street. This location will be used for the McCormick Memorial Institute for Infectious Diseases.

The Chicago *Tribune* Summer Hospital closed its second session on October 15. It has been open for sixteen weeks, during which time 372 patients, most of them poor children convalescing from various diseases, were cared for.

Owing to the lack of school inspection in Chicago, diphtheria is more prevalent than at any time for four years. The chief medical inspector of the Health Department is endeavoring to re-establish the school inspection service.

The Military Tract Association held its sixty-seventh annual session at Macomb on October 18. Dr. John P. Roark, of Bushnell, was elected president and Dr. Franklin E. Wallace, of Monmouth, was re-elected secretary and treasurer.

Joseph F. Glidden, the barbed wire magnate of DeKalb, who died recently, left directions for the erection of a hospital in DeKalb to be known as the Joseph F. Glidden Hospital, for which \$22,000.00 from his estate was set aside.

A chest of linen sufficient to supply a hospital for one year is being raffled by the Children's Hospital Society of Chicago. It is hoped to raise enough money by this means to provide the hospital with necessary service during the winter.

Chief Collins of the Chicago Police Department has recommended that the police ambulances be transferred from the control of the Police Department to that of the Health Department and that a physician be assigned to each ambulance.

United States Senator Benjamin Tillman lectured in the Orchestra Hall, Chicago, on November 27, for the benefit of the equipment fund of the Chicago Union Hospital. The new building, erected at a cost of \$60,000.00, is now about completed.

Diphtheria in Fairfield caused the closing of the public schools, Sunday schools and churches. The Health Commissioner of Moline reported, on November 24, nineteen cases of scarlet fever, four cases of diphtheria and one case of smallpox.

Items in the Chicago papers report the filing of a suit for \$25,000 damages against Dr. H. Edward Sauer by A. L. Doherty. Mr. Doherty claims that a gauze sponge was left in his wife's abdomen following an operation for appendicitis last July.

Scarlet fever is reported as epidemic in Glencoe, with the result that the public school, the post-office and the public buildings were closed for several days. The Health Department has been taking vigorous measures to prevent a spread of the disease.

Provident Hospital, Chicago, has published its fifteenth annual report, which shows that during the last year 1,216 hospital patients and 5,000 dispensary patients have received treatment. Nine nurses were graduated from the training school.

The Turck Institute, at Chicago, has received a complete collection of all micro-organisms known to infest the gastro-intestinal tract of man. This collection was presented by the Pasteur Institute of Paris and includes specimens obtained from all parts of the world.

Justice Underwood, of Chicago, fined A. W. Birkholz \$100 and costs for practicing medicine without a license. Birkholz advertised that he could heal all diseases without the use of medicine. The prosecution was conducted by the Illinois State Board of Health.

The Æsculapian Society of the Wabash Valley held its sixth annual meeting in Paris, Illinois, October 25. The next meeting will be held at Champaign in May of 1907. Dr. Chas. B. Johnson, of Champaign, was elected president, Dr. Herbert N. Rafferty, of Robinson, was elected secretary-treasurer.

The Cook County Alumni Association held its fortieth annual reunion November 15th. Dr. Nicholas Senn was elected president and Dr. Fred A. Besley secretary. Dr. Nils T. Quailes, the first physician to receive an appointment as Cook County interne, was present and delivered an address.

Dr. James A. Egan, secretary of the Illinois State Board of Health, states that there should be an ordinance forbidding the practice of burning leaves, as the smoke is irritating to the mucous membrane of the throat and nose and renders individuals inhaling it more susceptible to diphtheria and other diseases.

The Fifth District Medical Society met in Pekin, on November 8. The mayor delivered an address of welcome and Dr. J. Whitefield Smith of Bloomington, Councilor for the district, responded. Dr. Eugene F. Kelchner, of Delavan, was elected president, and Dr. Carl G. Muehlmann, of Pekin, secretary-treasurer.

The Illinois State Conference of Charities have elected Dr. Frank P. Norbury of Jacksonville president and have appointed the following committee on etiology of dependents. Chairman, Dr. Vaclav A. Podstata, of Elgin; members, Drs. Henry B. Carriel and Josephine Milligan of Jacksonville, and Hugh T. Patrick, Chicago.

The semi-annual meeting of the Fox Rixer Valley Medical Association was held in Aurora, November 13. Dr. Albert A. Fitz of Batavia was elected president, Dr. Ralph R. Dewitt of Hampshire vice-president, Dr. George F. Allen was re-elected as secretary-treasurer. The next meeting of the Association will be in Elgin in April of 1907.

The Sixth District Medical Society held its annual meeting at Jacksonville, October 26. The following officers were elected: Dr. Thomas J. Pitner of Jacksonville, president; Drs. Robert H. Christy of Quincy, Harry R. Lemen of Alton, vice-presidents; Dr. William P. Duncan of Jacksonville, secretary-treasurer. The 1907 meeting will be held in Quincy.

Dr. Michael McGrath, 78 State street, and Dr. Henry Richards, 146 State street, have been arrested by the federal authorities on indictments charging them with the use of the mails for improper purposes. Post-office inspectors sent decoy letters to the two men using the names of women and representing that the writers desired their services for illegal purposes.

Harry D. Easterly, of Peoria, with whom some of the physicians of the state have had unfortunate dealings in the past, has been arrested

and placed in jail. This action was taken by one Ed Schindler, of Peoria, on the charge that he had failed to pay money for damages due Schindler, although he had full control of the Peoria Health and Accident Company.

The Illinois State Homoeopathic Society purchased a site on the Illinois River in LaSalle County, on which to locate a tent colony for the treatment of tuberculosis. A company is to be formed to be known as the Buffalo Rock Tent Colony to conduct this enterprise. The Homeopathic Society is to be congratulated by the Illinois State Medical Society in this undertaking.

Dr. Frank Monroe Culver, head of the Red Cross Nurses' Association, was arrested on complaint of Alwin W. Hautau, who charged Dr. Culver with having hypnotized and defrauded him. Hautau claims that he formed a partnership with Dr. Culver while under hypnotic influence and that he was not allowed to leave the Doctor's presence while the partnership continued.

The Springfield Board of Education has replied to the attack on the President of the Board, made by the *Illinois State Journal*, criticizing the Board for its failure to close one of the local school buildings during an epidemic of diphtheria. The Board states that the president was acting on the advice of the Board of Health, that all of the cases of diphtheria are under quarantine regulations and that the closing of the school was not necessary.

Dr. and Mrs. J. C. Barr, of Lawrenceville, celebrated the golden anniversary of their wedding, November 9. Dr. Barr was born in Lancaster County, Pa., was reared in Ohio; graduated at the Ohio Medical College in 1857. He served during the war as major-surgeon of the First Ohio Infantry and located in Lawrence County after the war. He retired from practice about a year ago. His son, Dr. G. W. Barr, of Keokuk, Iowa, attended the wedding.

Mrs. Annie Arp, of New Liberty, Scott County, has brought suit for \$50,000.00 damages against Drs. A. L. Hageboeck, J. T. Haller and J. H. Meyhaus. The complainant alleges that the physicians operated upon her husband, Johannes Arp, for appendicitis, on August 2, 1905, and that, in the course of the operation, a gauze sponge was left in the abdomen, from which an abscess resulted, causing the death of the patient. The defense states that the gauze was removed subsequent to the operation while dressing the wound.

Dr. R. H. Fletcher, of the Chicago Emergency Hospital, 309 Fifth avenue, Chicago, is reported to have claimed that the Police Department was discriminating against his institution by refusing to send to it persons injured in the downtown district. Chief Collins, of the Police Department, says that the institution had an agreement with the city to treat all such cases free of charge and that it has not lived up to its agreement, and that he has, consequently, instructed ambulance drivers to take all accident cases to the County Hospital.

A warning has been sent to the medical profession throughout the country concerning a man representing himself as a San Francisco

refugee and giving the name of Dr. L. Lloyd Shaw. He tells a very interesting story of losing everything in the San Francisco disaster. He needs a little financial assistance to enable him to send his wife home to her family, or for some equally laudable purpose. He claims to have been a newspaper reporter and sometimes varies his story by stating that he is now employed by one of the Chicago papers. He is well dressed, clean shaven, about 5 feet 9 inches high, weighs about 150 pounds and has dark hair, slightly gray. He claims to have graduated from Rush Medical College in 1886.

The keeping of records and accounts is a most irksome duty to the active practitioner. No matter how busy or exhausting the day, they still remain to be attended to. Sooner or later they are slighted, and slipshod methods and confusion follow. The "Card System" revolutionizes this state of affairs. It eliminates all the disadvantages of books, and makes each record so comprehensible and easy of reference as to give it a new value. In lieu of the physician's memorandum book, case history book, cash book, ledger, and what-not, the card system substitutes two cards—case history card and ledger card. One card is used for each patient. Impressed with the worth and practicability of these cases, the Angier Chemical Company has developed a complete case, designed especially for physicians, and so arranged as to take care, in the best possible manner and with the least trouble, of his records and accounts. The first of January is the most convenient time to change from books to the card system. The Angier Chemical Company (*Allston District, Boston, Mass.*) is making a special advertising offer and low price for these history and ledger card outfits. Any of our readers who will write to them (mentioning this journal) will receive sample cards and details regarding their attractive offer.

MARRIAGES.

L. AUSTIN BURR, M.D., to Miss Josephine Raney, both of Bloomington.

FRANK J. FARA, M.D., to Miss Julia M. Tupy, both of Chicago, November 21.

HENRY CHARLES JOHANNES, M.D., to Miss Ada May Summers, both of Chicago.

HARRY EDWARD CLYDE, M.D., to Miss Jennie Mae Rothrock of Chicago, October 3.

MAURICE ALTMAN, M.D., Springfield, to Miss Gussie Salzenstein, Athens, November 14.

ERNEST C. WHITE, M.D., Springfield, to Miss Pearl McCreery, Springfield, November 8.

EDWARD A. GLASGOW, M.D., to Miss Mildred Daise Mattinly, both of Mulberry Grove, October 31.

HARRY L. POLLACK, M.D., Chicago, to Miss Mabel Hirsch of Burlington, Iowa, at Chicago, October 14.

GUSTAVE WILLIAM RUDOLPH, Elliot, Ill., to Miss Fannie Lovina Brooks, Minneapolis, Minnesota, October 30.

DEATHS.

SARAH DeLOSS, M.D., years of practice, 438 West Adams street, Chicago, died November 14, aged 64 years.

JOHN P. HEDRICK, M.D., died suddenly from heart disease at his home in Loraine, October 28, aged 48.

ANNIE W. MARTIN, M.D., died at her home in Elgin, October 24, from pneumonia, after an illness of six days, aged 79.

ARTHUR RAMSER, M.D., Jenner Medical College, Chicago, 1903, died at his home in Chicago, November 13, from heart disease.

FRANCIS M. RICHARDSON, M.D., Eclectic Medical Institute, Cincinnati, 1876, died at his home in Chicago, October 24, aged 75.

EVA M. L. SCOBELL, M.D., Hering Medical College and Hospital, Chicago, 1899, died at her home in Chicago, September 11, aged 33.

HARVEY DUNN, M.D., St. Louis Medical College, 1867, died at his home in Perry, September 11, after an illness of several years, aged 72.

E. B. LEFEVRE, M.D., Medical College of Ohio, Cincinnati, 1889; of Abilene, Kan., died from hemorrhage of the lungs in Danville, October 31.

GEORGE S. SCHIEBER, M.D., of Chicago, died Oct. 31, 1906. He was buried November 2 from the late residence, 1327 Dakin street, Chicago.

J. Y. CAMPBELL, M.D., Chicago Medical College, 1865, for 25 years a practitioner of Paxton, died at his home near Rochester, Ind., September 21.

ERNEST J. MILLER, M.D., College of Physicians and Surgeons of Chicago, 1888; died at his home in Sycamore, November 19, from embolism, aged 52.

REUBEN H. BAKER, M.D., Chicago Homeopathic Medical College, 1890, of Pearl City, died at St. Francis Hospital, Freeport, October 9, two days after an operation for appendicitis, aged 42.

GEORGE A. WILLIAMS, M.D., St. Louis Medical College, 1865, one of the oldest practitioners of southern Illinois, died at his home in Hardin, September 30, after an illness of several weeks, aged 70.

ELLIOT H. WHEELER, M.D., a veteran of the Civil War and for many years a practitioner of southern Illinois, died suddenly near Murphysboro, October 20, from dropsy, after a long illness, October 13.

JAMES MOFFITT, M.D., Rush Medical College, Chicago, 1868; who retired from practice in 1880 and has been an invalid for the past 18 years, died at his home in Monticello, September 21, from uremia, aged 66.

JULIUS G. VETTER, M.D., of Belleville, graduate of the College of Physicians of St. Louis in 1884; a member of the Board of Education of Belleville, died suddenly in that city, October 25. He was 53 years of age.

H. G. VAN SANDT (years of practice, Illinois), a veteran of the Civil War, a trustee of the Illinois State Normal School, Charleston, died at

his home in Montrose, Ill., September 21, from cerebral hemorrhage, aged 63.

RICHARD T. HIGGINS, M.D., Vandalia, died at the Prince Sanitarium, Springfield, November 14, aged 64 years. Dr. Higgins had been out of practice for a number of years and had given his attention to banking.

MARIE E. FRAHM, M.D., Northwestern University, Woman's Medical School, Chicago, 1899; formerly a practitioner of Mattoon, died at her home in Tuscola, September 30, from cerebral hemorrhage, after an illness of one week, aged about 30.

MERRILL GAYLORD PINGREE, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1880; who had been ill for a number of years, is reported to have committed suicide, October 15, by gunshot wound of the head and gas asphyxiation, aged 60.

GUILFORD DUDLEY ELDER, M.D., University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1877; a veteran of the Civil War; a member of the McLean County and Illinois State Medical Societies, died suddenly, October 1, at his home in Bloomington, from cerebral hemorrhage, aged 59.

LOUIS C. STARKEL, M.D., residing for some years in Chicago and formerly for many years a practitioner of Belleville, from which place he was elected treasurer of the state, died at the Lincoln Park Hospital, October 30, 1906, aged 67 years. The funeral was in charge of the Masons and Knight Templars and the interment was made at Belleville.

JEROME B. SNYDER, M.D., Chicago Medical College, 1864; a veteran of the Civil War; for two years a member of the city council, and for seven years president of the Board of Education of Polo; United States Examining Surgeon for four years; a member of the Ogle County and Illinois State Medical Societies, died at his home in Rowan, Iowa, September 29, after a long illness, from cancer of the stomach, aged 62.

J. M. REID, M.D., who practiced medicine from 1894 to 1904 at DeLand, and later for a short time at Fairmont, died at Bridgeport, Conn., Oct. 9, 1906. His remains were returned to DeLand for burial and the services were largely attended by his relatives and friends of that town. Owing to poor health, Dr. Reid had taken a position in the office of the American Graphophone Co. Dr. Reid was in his thirty-seventh year at the time of his death.

ARNOLD PLUMER GILMORE, M.D., Jefferson Medical College, Philadelphia, 1874; formerly of Winona, Minn., but for more than 20 years a resident of Chicago, and a specialist on diseases of the eye and ear; president of the Columbus Safe Deposit Company, and one of the principal owners of the Columbus Memorial building; one of the members of the first board of trustees of the Sanitary District, died at his home in Chicago, October 10, from Bright's disease, after a long illness, aged 55.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of November the following members of the Illinois State Medical Society became members of the American Medical Association:

Alvarez, Manuel, Chicago.
Blair, J. W., Harvey.
Earnheart, E. G., Dongola.
Gernsey, H. N., Dover.
Hall, J. W., Chicago.
Hinkle, W. A., Peoria.
McElfresh, C. H., Springfield.
Metz, I. W., Springfield.
Nauth, D. F., Rockford.

Neer, I. E., Edinburg.
Nichols, H. J., Quincy.*
Ogram, A. J., Jacksonville.
Sabin, F. A., Anna.
Sheller, W. O., Big Rock.
Toalson, J. J., Peoria.
Weld, J. C., Hospital.
Werner, A. W., Quincy.

NEW MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY.

During the month of November the following physicians became members of the Illinois State Medical Society:

BUREAU COUNTY.

Hess, H. R., Whitefield.

CHAMPAIGN COUNTY.

Powers, F. H., Champaign.

COOK COUNTY.

Bagley, H. P.
Bahl, W. H.
Blakelidge, Mary.
Boehmer, Olav.
Breakstone, B. H.
Bunning, Henry F.
Burbach, William M.
Burkett, Susie L.
Cater-Sweeting, G. M.
Clarke, G. Morgan.
Clay, Harry Elwin.
DeVault, A. N.
Dolan, A. N. J.
Fauls, Winfield Scott.
Goetinger, Charles F.
Goodwin, C. G.
Haeusler, Anna Martha.
Hansen, Oscar A.
Hays, Woodward H.
Holliday, O. M.
Hollister, Mary C.
Holm, Anna S. W.,
Horn, Albert T.
Howard, Charles E.
Irons, Ernest E.
Joffe, William.
Jordan, G. T.
Kelley, Thomas H.
Knap, W. H.
Lee, Geo. W.
Luken, Martin Girard.
Lipsbulch, George U.
Lumley, Clinton G.
Lynch, Frank W.
MacChesney, William Nelson.
McDonald, M. Bertha.
McDowell, William S.
Morton, F. R.
Moss, E. B.
Murray, Alfred N.
Napheys, W. D.
Newton, Herman C.
O'Brien, C. L.
Olsen, E. T.

Orndorff, Benjamin H.
Ostrowski, Leonard M.
Pearson, L. M.
Peterson, Theodore J.
Pirosh, Sigmar.
Ream, Fred K.
Roe, Emory W.
Rulifson, G. F.
Rydin, G. G.
Sahud, M.
Steffen, R. J.
Thompson, Gertrude F.
Thorek, M.
Ullman, Eva Prescott.
Walker, Robert J.
Wedeles, Leopold.
West, William B.
White, William S.
Zöhrlaut, George G.

DEKALB COUNTY.

Gould, G. W., Jr., Fairdale.
Greeley, Paul E. N., Waterman.

EDWARDS COUNTY.

Stahl, S. S., Albion.

FAYETTE COUNTY.

Kepmer, M. E., Laclede.

JERSEY COUNTY.

Park, F. W., Fieldon.

KNOX COUNTY.

Beecher, C. E., Gilson.
Cowan, J. E., Galesburg.
Elion, Carl, Altona.
Ripley, C. E., Galesburg.
Thompson, T. W., Knoxville.
Slater, A. S., Watauga.

M'LEAN COUNTY.

Ayling, C. H., Gridley.

PEORIA COUNTY.

Borin, W. A., Napleton.
Dowdall, W. T., Peoria.
Finnell, J. L., Peoria.
Parker, Geo. G., Peoria.
Sholl, Rex, Peoria.
Short, W. H., Peoria.
Wyatt, Walter, Peoria.

PLATT COUNTY.

Gaston, M. Adelaide, Cerro Gordo.

WINNEBAGO COUNTY.

Nauth, T., Rockford.

ILLINOIS STATE MEDICAL SOCIETY

SECTION OFFICERS AND COMMITTEES.

SECTION ONE.

C. W. Lillie, E. St. Louis.....Chairman
Ralph W. Webster, 100 State St., Chicago...
.....Secretary

SECTION TWO.

E. H. Ochsner, 710 Sedgwick, St., Chicago.
.....Chairman
H. W. Chapman, White Hall.....Secretary

COMMITTEE ON PUBLIC POLICY.

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COUNTY SOCIETIES.

This list is corrected in accordance with the best information obtainable at the date of going to press. County secretaries are requested to notify THE JOURNAL of any changes or errors.

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J. M. Grimes, Pres.....Camp Point
George E. Rosenthal, Secy.....Quincy
Alexander County.

Samuel B. Cary, Pres.....Cairo
J. T. Walsh, Secy.....Cairo

Bond County.

John W. Warren, Pres.....Greenville
J. C. Wilson, Secy.....Greenville

Boone County.

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R. B. Andrews, Secy.....Belvidere

Brown County.

S. J. Wilson, Pres.....Versailles
F. E. McGann, Secy.....Mt. Sterling

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J. C. White, Pres.....Seatonville
O. J. Flint, Secy.....Princeton

Calhoun County.

I. S. Berry, Pres.....Batchtown
Stephen Platt, Secy.....Hardin

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G. W. Johnson, Pres.....Savanna
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C. M. Craig, Pres.....Champaign
C. D. Gulick, Secy.....Urbana

Clark County.

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L. J. Wier, Secy.....Marshall

Clay County.

W. E. Burgett, Pres.....Louisville
C. E. Duncan, Secy.....Flora

Christian County.

M. W. Staples, Pres.....Grove City
D. D. Barr, Secy.....Taylorville

Clinton County.

T. E. Alsop, Pres.....Carlyle
C. H. McMahon, Secy.....Carlyle

Coles County.

N. C. Iknayan, Pres.....Charleston
O. M. Ferguson, Secy.....Mattoon

Cook County—Chicago Medical Society.

G. W. Webster, Pres.....Chicago
R. T. Gillmore, Secy.....Chicago

Crawford County.

F. Dunham, Pres.....Robinson
H. N. Rafferty, Secy.....Robinson

Cumberland County.

G. E. Lyon, Pres.....Robinson
W. R. Rhodes, Secy.....Toledo

DeKalb County.

Geo. W. Nesbie, Pres.....Sycamore
C. H. Nordoff, Secy.....Genoa

De Witt County.

J. M. Wilcox, Pres.....Clinton
A. E. Campbell, Secy.....Clinton

Douglas County.

E. S. Allen, Pres.....Arcola
Walter C. Blaine, Secy.....Tuscola

Du Page County.

(Affiliated with Cook County.)

Edgar County.

W. S. Jones, Pres.....Redmon
W. H. Ten Broeck, Secy.....Paris

Edwards County.

W. E. Buxton, Pres.....Samsville
J. H. Lacey, Secy.....Aibion

Elhingham County.

T. J. Dunn, Pres.....Elliotstown
C. F. Burkhardt, Secy.....Watson

Fayette County.

H. D. Smith, Pres.....Vandalia
A. L. T. Williams, Secy.....Vandalia

Franklin County.

A. G. Orr, Pres.....Benton
R. E. Poindexter, Secy.....Benton

Fulton County.

T. R. Plummer, Pres.....Farmington
D. S. Ray, Secy.....Cuba

Gallatin County.

I. A. Foster, Pres.....New Haven
J. W. Bowling, Secy.....Shawneetown

Greene County.

H. W. Chapman, Pres.....Whitehall
H. A. Chapin, Secy.....Whitehall

Grundy County.

W. E. Walsh, Pres.....Morris
H. M. Ferguson, Secy.....Morris

Hamilton County.

I. I. Hall, Pres.....Broughton
G. N. Lyons, Secy.....McLeansboro

Hancock County.

S. M. Parr, Pres.....Fountain Green
Wm. Blender, Secy.....Carthage

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I. F. Harter, Pres.....Stronghurst
Ralph Graham, Secy.....Biggsville

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J. E. Westerlund, Pres.....Cambridge
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Robt. Lumley, Secy.....Watseka

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W. C. Hill, Secy.....Murphysboro

Jasper County.

H. S. Hinman, Pres.....Newton
Jas. P. Prestley, Secy.....Newton

Jefferson County.

J. H. Mitchell, Pres.....Mt. Vernon
J. R. Whitlock, Secy.....Mt. Vernon

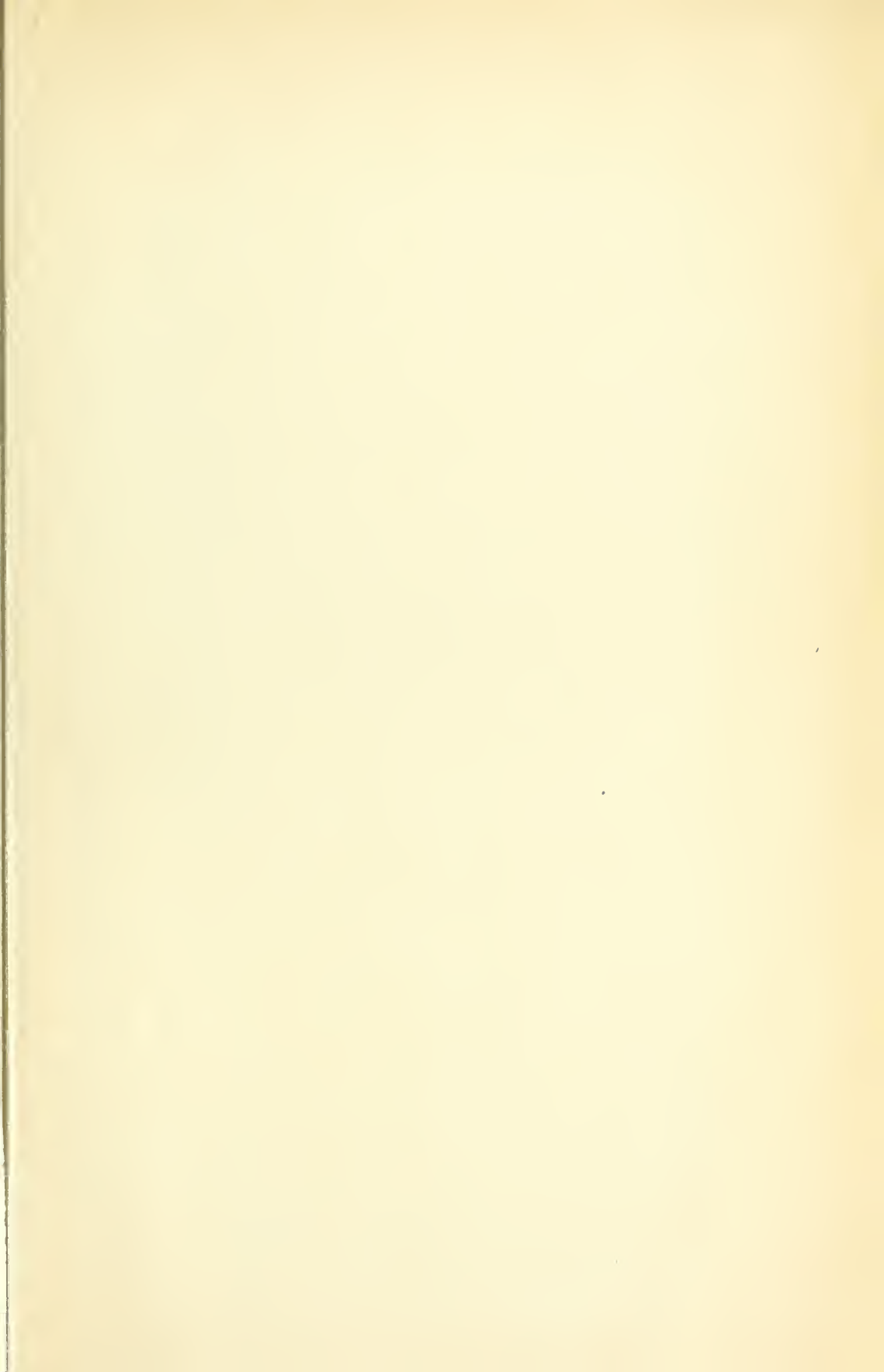
Jersey County.

A. K. Van Horne, Pres.....Jerseyville
H. R. Bobannan, Secy.....Jerseyville

Jo Daviess County.

E. M. Bench, Pres.....Galena
D. G. Smith, Secy.....Elizabeth

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H. O. Williams, Secy.....Belknap
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G. S. Allen, Secy.....Aurora
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- B. F. Uran, Pres.....Kankakee
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C. P. Gore, Secy.....Lawrenceville
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Livingston County.
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John Ross, Secy.....Pontiac
Logan County.
- L. L. Leeds, Pres.....Lincoln
H. S. Oylor, Secy.....Lincoln
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- J. B. Bacon, Secy.....Macomb
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McLean County.
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O. M. Rhodes, Secy.....Bloomington
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- J. M. English, Pres.....Gillespie
E. A. Bleuler, Secy.....Carlinville
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F. K. Sidley, Secy.....Peoria
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